

Feb. 1959

St. 2

ATHLETIC JOURNAL

February, 1959

Vol. XXXIX No. 4

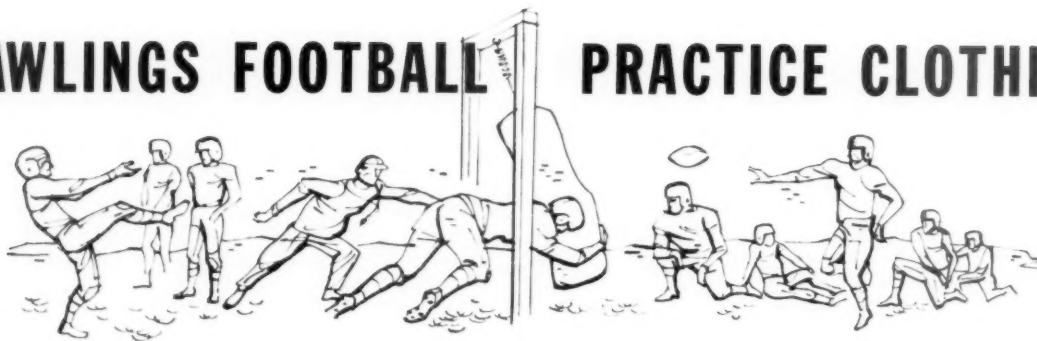
RECEIVED
FEB 10 1959
MIAMI UNIVERSITY
LIBRARY



CE

2

RAWLINGS FOOTBALL PRACTICE CLOTHING



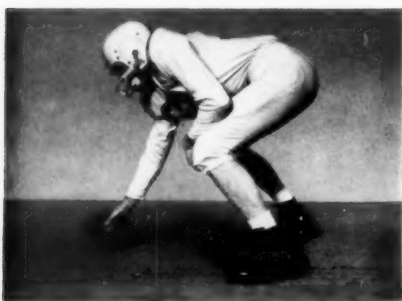
FITS LIKE GAME CLOTHING...

All the skill and craftsmanship of Rawlings Action Tailored game clothing goes into the making of Rawlings practice clothing. It's designed to hold pads properly, fit the action of

the player to help prevent injury. Players are not subjected to the discomfort of different clothing fit when you suit them up in Rawlings practice clothing.



FEELS LIKE GAME CLOTHING...

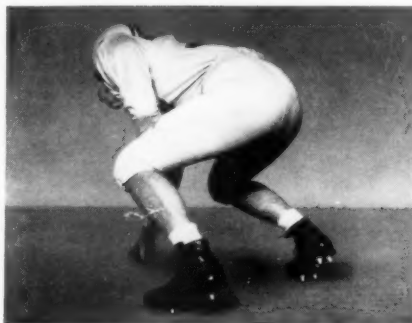


Rawlings practice clothing gives players the same feel as game clothing because Rawlings duplicates game clothing with the same materials, same fine tailoring. Rawlings practice

clothing is comfortable, there's no chafing and plenty of elasticity for extra support and protection . . . makes "game conditions" realistic.

SCRIMMAGE AFTER SCRIMMAGE!

Rawlings practice clothing holds up not only in the roughest scrimmages—but in the repeated rough-and-tumble launderings it gets. Rawlings tailoring combines fit, feel and strength perfectly. Through repeated washings it stays soft—



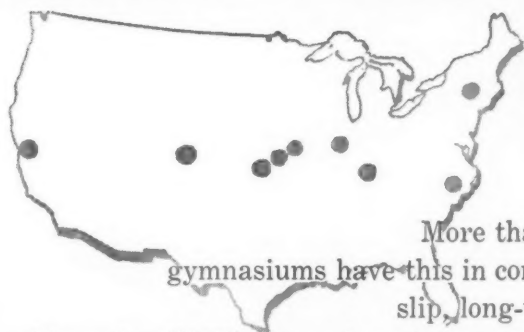
maintains its fit. And Rawlings game clothing is easy to launder. Rawlings practice clothing is available in knit, fabric and half and half pants and cotton or nylon knit jerseys. Check Rawlings complete selection.

Rawlings® "The Finest In The Field!"

ST. LOUIS • NEW YORK • LOS ANGELES • DALLAS • CHICAGO

TIMES SQUARE TO THE GOLDEN GATE . . .

AGAIN IN 1958-59, EVERY MAJOR BASKETBALL TOURNAMENT IS BEING PLAYED ON A *Hillyard* TROPHY FLOOR!



More than 15,000 of America's finest arenas and gymnasiums have this in common: the light, smooth, no-glare, non-slip, long-wearing beauty of Hillyard's "Finish for Champions"! Players and spectators see every play clearly. Perfect for televising.

REFINISHED WITH *Hillyard* TROPHY - Ready for N.C.A.A. Finals

Kentucky Fair and Exposition Center



The Hillyard "Maintaineer®" is your expert Gym Floor Care Consultant, "On Your Staff, Not Your Payroll!"



ST. JOSEPH, MO.
Passaic, N. J.
San Jose, Calif.

Branches and Warehouse Stocks in Principal Cities

MAIL THIS COUPON TODAY

HILLYARD St. Joseph, Mo. Dept. P-1
Please have the local Hillyard Maintaineer show me how easily I, too, can have a TROPHY Championship Gym Floor.

Name.....
Institution.....
Address.....
City..... State.....

ATHLETIC JOURNAL

1719 Howard Street
Evanston, Illinois

Established in 1921 by
MAJOR JOHN L. GRIFFITH

JOHN L. GRIFFITH, *Publisher*
M. M. ARNS, *Editor*
HERB ARTELT, Jr., *Art Editor*



Eastern Advertising Representative
Charles Thorp, 370 Lexington Avenue,
New York City

Subscription Prices:

Two dollars per year; \$3.00 for two years;
\$3.75 for three years; Canada \$2.50 per
year; foreign \$2.75 per year. Single copies
25 cents each for current volume; 35 cents
each for back copies. Copyright 1959
by Athletic Journal Publishing Co.

Change of Address:

Requests for change of address must reach
us thirty days before the date of issue with
which it is to take effect. Duplicate copies
cannot be sent to replace those undelivered
through failure to send advance notice.
Published monthly except July and August.
Member of the Audit Bureau of Circulation.
Address all communications regard-
ing circulation and manuscript to:

ATHLETIC JOURNAL PUBL. CO.
1719 HOWARD STREET
EVANSTON, ILLINOIS

Second class mail privileges authorized
at Evanston, Illinois, with additional
second class entry at Rochelle, Illinois.

Volume XXXIX

Number 6

February, 1959

5 TRACK ARTICLES

THE 440 RECORD HOLDER	6
Carl B. Antel	
TRAINING FOR THE DISTANCES	8
Senon A. Castillo	
THE DISCUS ANALYZED	10
Don Canham	
TRAINING PROGRAM FOR A CHAMPION HIGH SCHOOL HIGH HURDLER	32
Rob Stout	
A NEW TYPE OF INCENTIVE AWARD	62
Norman C. Lumian	

5 BASEBALL ARTICLES

PLAYING CATCH WITH A PURPOSE	16
Glenn G. Dahlem	
DARING ON THE BASE PATHS	20
Robert T. Kretchmar	
THE PLAY OF THE CATCHER	25
Frank Sancet	
HITTERS AND PLACE HITTING	40
Philip L. Philip	
TRAIN YOUR BASE COACHES	42
Norman F. Lehman	

1 ARTICLE ON WEIGHT TRAINING

INCREASE THE EXPLOSIVE POWER OF YOUR ATHLETES	18
Edward S. Steitz	

1 ARTICLE ON INTRAMURALS

LIMA'S INTRAMURAL PROGRAM	38
Dr. David O. Matthews	

1 GENERAL ARTICLE

NEW TRENDS IN TEACHING WILL HELP COACHING	44
Charles Ream	

6 FEATURES

FROM HERE AND THERE	4
FOOTBALL DRILL OF THE MONTH	22
FOR YOUR BULLETIN BOARD (CATCHING THE BASEBALL)	34
NEW BOOKS	58
BUYERS GUIDE	65
NEW ITEMS	67

FRONT COVER ILLUSTRATION

In the illustration of Dave Mills, new national high school record holder in the 440, notice that his feet are perfectly straight and he is completely relaxed. These photographs, taken with the Athletic Journal's high-speed camera, show a portion of the race just before Mills goes all-out for the final finishing effort.

A Look At This Issue and a Glance Ahead

For the track coach, this issue presents pictorially, of course, three of the top track athletes, Dave Mills, Rink Babka, and Alex Henderson. For the baseball coach, there are four articles on his sport plus the gem by Frank Sancet. The 70 illustrations which are part and parcel of this article, combined with the baseball pictures in the January issue, make a neat total of 131 which we confidently predict will be more than three times as many as will be found in

the next coaching magazine. We're not through either, because scheduled for March is a *beaut* of a pitching article, featuring three of the more successful younger major league pitchers, Dick Drott, Larry Jackson, and Dave Hillman. Next month we are presenting the second part of Don Canham's masterpiece on the discus, and will illustrate it with pictures of Al Oerter. With the spring sports soon in full swing, it's time to plan ahead for the fall. Now is the time to order your football equipment. We will help put you in that frame of mind by presenting several football articles.

just developed...

CONTOUR-FIT

the shoe that puts
other track shoes
out of the running



leads all other athletic
footwear in scholastic
and major league use.



ALL
KANGAROO
UPPERS

SPOT-BILT'S NEW TRACK SHOE FITS...AND FLEXES ...AND "FLOATS"...WITH NEVER-BEFORE COMFORT

- the new reshaped last, contoured to follow the natural curve of the foot at every point.
- true action fit; hugs the heel, moulds to arch and instep, curves at toe.
- amazingly lightweight Wing-Flex construction, supple chrome athletic-tanned KANGAROO leather upper and ultra flexible retanned leather outer sole.
- patented nylon inside reinforcement; lightweight foam sock lining; roll-over tongue with sponge lining.
- wide heel base support.



If your local sports
equipment store does
not carry Spot-Bilt,
write us for the name
of your nearest dealer.

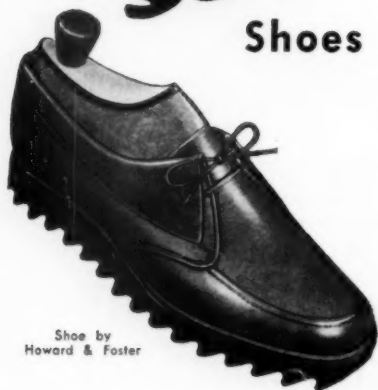
SPOT-BILT, INCORPORATED
160 Monroe Street • Cambridge 42, Massachusetts

**More speed
Less fatigue**



when you wear

*** RIPPLE
Sole**
Shoes



Shoe by
Howard & Foster

Scientific laboratory tests prove revolutionary RIPPLE® Sole shoes absorb shock to reduce leg fatigue, balance your weight heel to toe, lengthen your stride several inches and give firmer traction on wet or slippery surfaces.

Called by Reader's Digest "the most important shoe improvement in 2,000 years", RIPPLE® Sole's walking action works like this:

As flexible corrugations depress underfoot, a unique forward motion helps cut the shock of each step. When ridges spring back (as the foot is lifted) a second forward motion results. Hence — The Shoe that Walks for You. No other shoe like it!

*TM — RIPPLE SOLE CORP.

For complete report on RIPPLE® Sole performance from International Record of Medicine, write:

RIPPLE SOLE CORPORATION
538 Mutual Building • Detroit, Michigan



*from here
and there*

MINNESOTA has under consideration a plan whereby the state-sponsored tennis and golf tournaments would be held in the fall instead of the spring . . . Prior to the start of the current winter sports season, the Oklahoma State coaching staff had a combined record of 1001 wins, 323 losses, and 16 ties . . . During the school year, 1947-48, 451 Minnesota schools were enrolled in the Athletic Accident Benefit Plan. The number of pupils enrolled was 24,228 and the number of claims paid was 4,657, for a total amount of \$43,602, or an average per claim of \$9.36. Ten years later there were 460 schools with 34,328 pupils enrolled. The number of claims had increased to 6,925, while the total amount had jumped to \$102,897 for an average of \$14.86 per claim . . . Prior to this past Big Eight tournament, 108 tournament games had been played between Big Eight Conference schools. Six of these games were between Kansas State and Kansas, with each holding three victories. Eliminating the six games among themselves, the two Kansas schools account for 38 victories as against only 10 losses. The winning percentages are as follows: Kansas .800; Kansas State .666; Oklahoma State .666; Missouri .531; Oklahoma .500; Iowa State .441; Colorado .280; and Nebraska .233. Surprisingly enough, Iowa State has played in the most games, 34 . . . Quote of the month — The Texas Study Commission on Health and Physical Education in a recent report said: "The competitive sports are definitely a part of the physical education program and these courses offer the same opportunity to physically superior students as advanced subjects in other areas serve the mentally gifted children."

IN the twelve seasons since the conclusion of World War II, more points have been scored in Syracuse University basketball games than in the previous 35 seasons . . . Teams used to cold climates need at least five days to become acclimated to warm weather. According to studies by Dr.

David Bass, working with the U.S. Army, a sudden exposure to heat not only brings on *spring fever*, but also places a strain on the circulatory system . . . There is a move underway to change the wrestling rules whereby more emphasis would be placed upon attack. This is to bring the rules more in line with those governing international competition. If approved, there would be less emphasis upon riding time, credit for defensive maneuvers or the length of time a wrestler must pin his opponent's shoulders to the mat . . . Thirteen schools have had three or more representatives in the Football Hall of Fame. Yale leads with 9, followed by Harvard with 7. Michigan and Minnesota each have 6, while there are 5 from Princeton. Notre Dame, Stanford, and Army have 4, while Cornell, Chicago, Alabama, and Southern California each have 3. Each one of the Ivy League schools is represented. The Southeast Conference is next in line with 9 of the 12 schools represented . . . Whoever said the linemen do the dirty work, and the halfbacks get the glory, knew what he was talking about. There are just as many halfbacks in the Hall of Fame as there are interior linemen. Of course, there are five players in the interior line for every two halfbacks. All in all, in checking over playing positions of the 117 selected so far, it is noted that 58 per cent were backs.

HURDLE the COST

With Our New Complete Line

★ steel automatic rocker hurdle	\$16.60
★ folding steel throwing circles	18.95
★ imported starting revolvers	8.95
★ galvanized steel vaulting box	18.50
★ steel pole vault stands	46.60
★ 7 jewel giant sprint timer	19.95
★ 14 foot twin tapered vaulting pole	36.00
★ aluminum folding starting block	7.95
★ steel high jump stands	36.60
★ 100 ft. steel tape	4.95
★ pole vault assists	1.95

Write To:

ECONOMY TRACK EQUIPMENT
1824 Newark, S.E. Grand Rapids, Mich.

CHAMPION EXTRA!

**NEW
LOW
PRICES**

Complete Physical Education Uniforms 3 BIG-VALUE COMBINATIONS

FROM
Champion

FEATURING:

- T-Shirts in white and colors.
- Gym Pants in white and colors with our exclusive triple stitched Boxer style elastic waist that's specially treated to be heat resistant.
- Your school design processed in your own school color on both shirt and pant.
- Permanent color processing that will not fade, run or wash out.
- Consecutive numbers incorporated in the design at no extra charge.

1919 — 1959

Celebrating Our 40th Anniversary of Service to the Athletic Field

Champion's "Complete Phys. Ed. Uniforms" are priced lower, and the savings are passed along to you.

Follow the lead of more and more of the nation's colleges and high schools. Equip your school with Champion Phys. Ed. uniforms — top quality, long-wearing full washability! Here are the three standard T-shirt and Gym Pant combinations.

GYM SUIT COMBINATION 1 (All White)



T-Shirt: Style 78QS. Top quality cotton, full cut, ribbed form-fitting neck. **WHITE ONLY.** Sizes: S-M-L.

Gym Pant: Style KEJ. Full cut, 4-piece "Sanforized" cotton twill. Triple stitched Boxer style waist with heat resistant 1 1/4" elastic. **WHITE ONLY.** Sizes: XS-S-M-L.

Complete Price, including shirt and pants processed in your own school color with your own design . . .

\$1.50 per uniform.

GYM SUIT COMBINATION 2 (White and Colors)



T-Shirt: Style 78QS. White.

Gym Pant: Style KE/8. In following colors—all stocked for immediate delivery: Dk. Green, Kelly, Navy, Royal, Maroon, Scarlet, Cardinal, Orange, Purple, Brown, Gray, Black, Gold. Full elastic waist. Sizes: XS-S-M-L. Complete Price, including shirt and pants processed in your own school color with your own design.

\$1.55 per uniform.

GYM SUIT COMBINATION 3 (All Colors)



T-Shirt: Style 84QS. In following colors—all stocked for immediate delivery: Dk. Green, Orange, Purple, Kelly, Navy, Scarlet, Maroon, Royal, Gray, Black, Gold and Old Gold. Same construction as 78QS. Sizes: XS-S-M-L.

Gym Pant: Style KE/8.

Complete Price, including shirt and pants processed in your own school color with your own design . . .

\$1.70 per uniform.

WRITE FOR CURRENT CATALOG

FREE!

**GYM
SUIT
SAMPLE**

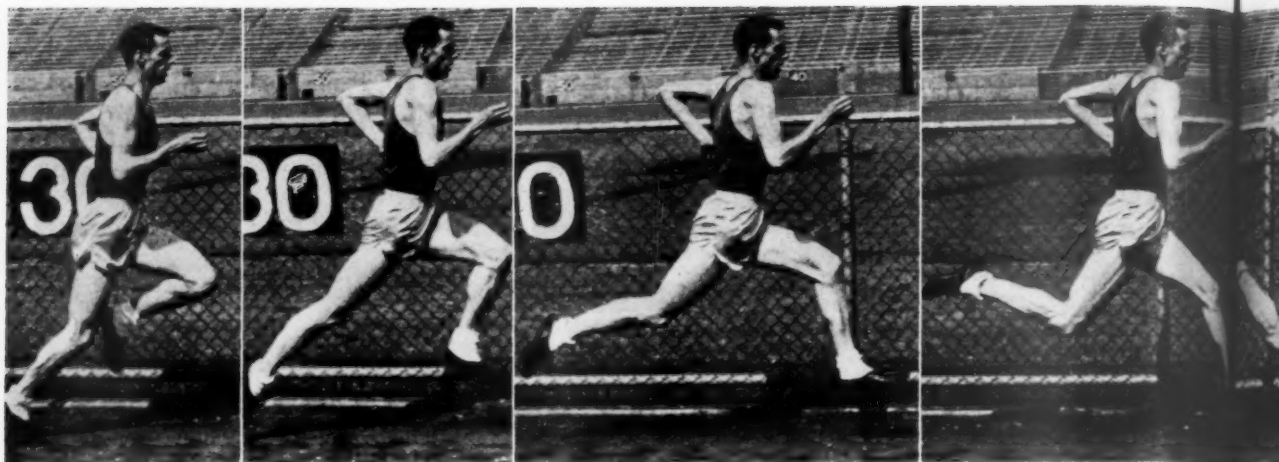
Champion will send you a free sample of the T-Shirt and Gym Pant so you can see how a gym suit for your Physical Education classes will look with your design in your school color combination.

This sample request must come from the Physical Education department or office. Please specify design and color when writing for sample.

CHAMPION
Knitwear Co., Inc.

**OUR NEW
ADDRESS**

**115 COLLEGE AVE., ROCHESTER 7, N. Y.
P.O. BOX 850, ROCHESTER 3, N. Y.**



Dave Mills is 6 feet, 1 inch tall, and weighs 145 pounds. Illustration 6 shows the fine arm action that helps to carry him along in the 440. Dave's ability to run in a relaxed manner through almost all of a race has helped him. An effortless stride coordi-

nated with a fine arm carry is evident. Dave's stride was exactly 8 feet. He does have a tendency to bring his rear leg up a little too high and loses time getting it back to the ground for the next step. Illustration 7 shows a slight back lean that was very pronounced near the end of the 440 race. Illustrations 9 and 10 show excellent body lean which was very typical during most of the race.

The 440 Record Holder

By **CARL B. ANTEL**

Track Coach, Lakewood, Ohio, High School

A TRACK coach does not meet many boys who have both the natural ability and the burning desire to become champions. Dave Mills, the national scholastic 440-yard record holder, was one of these unusual boys. He was born in Galt, Ontario and later moved to Sudbury where he spent most of his childhood. In 1953 he moved to Cleveland, Ohio and attended John Marshall for two years. During the summer of 1955 Dave moved to Lakewood and participated in our Junior Olympic program that

summer. We saw that he had the natural ability and the desire to excel in track. With this combination we knew Dave was destined for great things.

In the fall of 1955, he came out for cross-country and spent most of his time doing steady running. Dave did jogging over distances of a half mile to a mile and a half, but did not do any competitive running. We are sure competitive running would have done him a great deal of good, but at the time he was not forced to compete.

When we started indoor track, Dave

was worked into the relay teams. Ordinarily he would have been worked into the open events, but that year we had two boys who could defeat him in the short races. As the indoor season progressed, he was moved in with the 440-yard men, and in a short time was one of the best. Dave went on to win every 440 race the balance of the indoor season.

As the outdoor season progressed, Dave kept on improving. His best time in the 100-yard dash was 10 flat, in the 220 — 22.3, and in the 440 —

Illustration 1 shows Dave ready for the start. In this picture his head is held a little higher than usual. It is usually at an angle directly down from his shoulders which would be about two inches lower than shown. We found that Dave had better success and was more relaxed when he used a foot spacing of 14 inches. Illustrations 2 and 3 show the initial effort in which pressure is placed on both feet, and the start of a strong movement of the left arm forward and the right arm to the rear. In Illustrations 4 and 5, the coordinated effort of both arms and legs starts Mills out with all the power he can exert. Dave worked many hours correcting a bad cross-arm action during the first two steps out of the blocks. These illustrations show that he is getting a maximum drive from his arms by thrusting them forward and slightly to the middle of his chest.





49.9. During his sophomore year he was defeated twice by the same boy, but in the state finals Dave came through as state champion.

When Dave started his second year of track, many people were expecting great things. He started off strong during the indoor season. In his first big relay meet, he ran a 49-second anchor in the mile relay. This relay was run on a 12-lap track.

Outdoors Dave was also doing well with a 9.85 100, a 21.8 220, and a 49.6 440. Three weeks before the state meet he developed a tender leg and was not worked very hard in practice. Winding up the season with his leg well taped, Dave finished second in the 100 and 220, and again won the 440 in the state meet.

In his senior year, he again went out for cross-country and worked hard at it. He was not sold on the two-mile distance but did turn in some average times. This training helped him reach his goal.

Dave was eighteen years old when he started his senior year in track, and was able to take more work than some of the other boys on the team. His

early indoor work was set to build up endurance in order to get him into top shape for the outdoor season. Our plan was to use him in the 880 during the indoor season and then drop him back to the 440 outdoors.

CARL ANTEL graduated from Miami University (Ohio) where he participated in football. For the past eight years he has been at Lakewood High School as head track coach and line coach in football. During that time his track teams have won five district championships, six city indoor championships, seven major relay championships, and have been runners-up in the state meet three times.

We start practice after Christmas vacation and have a three- to four-week preliminary training program. During this time the work was gradually built up until we felt Dave was ready for the racing distance. We have a 20-lap track, but treat it as a 22-lap

track. Following is a breakdown of Dave's first month's work:

First Two Weeks—1. Warm up by jogging clockwise five laps, 400 yards. Ten minutes are devoted to exercise which consists of stretching, chins, push-ups, leg lifts, and rope skipping. 2. Pick-ups — these were done in groups of five boys. Each time a lap was finished the last man moved up to take the lead. The number of laps was increased as the training program went along. We start with five laps and repeat twice. The number of repetitions also increases as the training program progresses.

Second Two Weeks—1. Same warm-up as used previously. 2. Repeat the 400-yard laps. We used five laps for the repeat work. The boys started with three laps and had a two-minute rest after each lap. They worked up to four laps with a three-minute rest after each lap. Each lap was run in exactly 12 seconds. 3. After ten minutes rest, they jogged through an 880, using proper arm carry and keeping stride in mind.

The last week in February misfor-

(Continued on page 59)

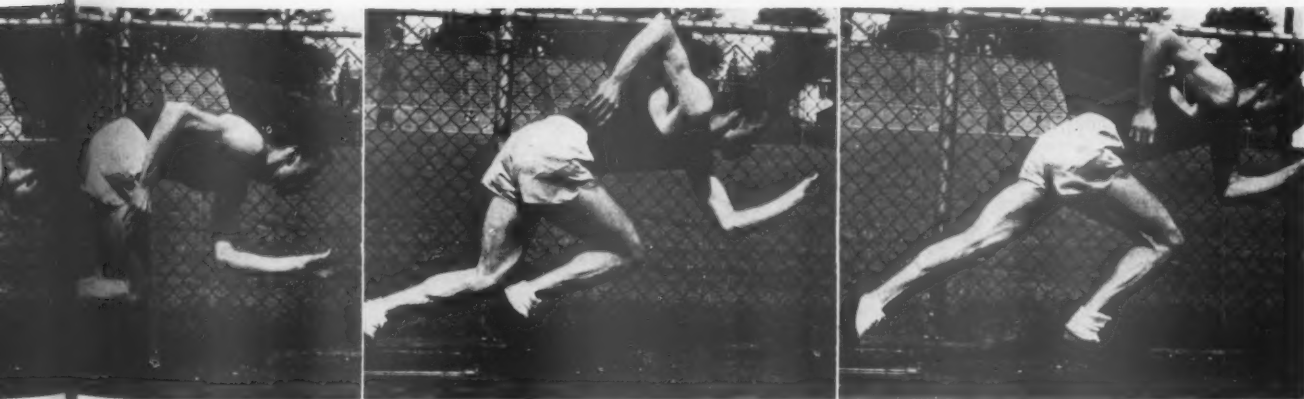




Illustration 1 shows Henderson's tremendous upper body development and the manner in which he utilizes it. He is about to start a movement forward. Notice his concentration. His hands are pinched in a manner which keeps his whole body under control. In the illustrations, Henderson's style and that of Bud Edelen of Minnesota are compared. Illustration 2 shows Henderson has reached the pinnacle of his drive. He demonstrates complete control of his upper body. His ability to run with an upright stance comes from his chest development. He has lifted extremely heavy weights in proportion to his size.

Training for the Distances

By SENON A. CASTILLO

Track Coach, Arizona State University, Tempe, Arizona

WE firmly believe that track coaches are able to learn more from the men they coach than they can from all the books they read. In our three years of working with Alex Henderson, we have learned a great deal about distance running.

Too many of our athletes look upon distance running as a meager and dreary section of track and field, but it should be pointed out how distance men have advanced in times from one mile to 26 miles in comparison with sprint times. Some might argue that there is more scope for faster times in the distances than in the sprints; however, this statement is not true.

Most sprinters are naturally speedy. Many of them see no reason why they

should train for faster times. They lack the drive to experiment as does the successful distance man. Sprinters are conformists. They go on doing what has been done for generations; whereas the successful distance man looks for better ways in which to bring about faster times.

There have been many stories about self-made athletes, some with little or no natural ability who have attained great heights in distance running through an intelligent program of training. It is true that there is no substitute for hard work regardless of man's desire, whether it be in academic subjects or in athletics. As is true in all things, some individuals are gifted with natural ability.

Many athletes who feel they lack natural ability avoid distance running. No man who has made his mark among his fellows in athletics need fear that he will ever regret the work and striving as time wasted. If he has really put forth the proper effort, worked in the heat and in the cold, year in and year out, he will find he has acquired something very precious, and difficult to attain, and that is character.

Training for distance running can be one of the most enjoyable phases of track and field. Many athletes feel that training is long, arduous, and a waste of time.

Training for distance running

(Continued on page 60)

Illustrations show Alex Henderson setting a new record of 8:51.3 in the two mile at the 1958 Drake Relays.

Illustration 3 shows Henderson demonstrating the float or semi-completion of the drive. His hands are still pinched and have complete control of his body. His arms are carried at about waist height. They swing forward and across his body, but travel no further than midway.

Illustration 4 shows that at the completion of the stride Henderson's carriage still keeps him in control of his whole body. Henderson who is 5 feet, 9½ inches is about the same height as Bud Edelen. At the completion of his stride he has maintained the same height as Edelen who is at the top of the stride.



Another **first** by WILSON



OUTLASTS
RUBBER
2 TO 1

GREATEST
PUNCTURE
RESISTANCE

NEW
ABSOLUTE
UNIFORMITY OF
WINDING

GREATER
PEBBLE
RETENTION

NEW
NYLONITE
CARCASS

New TN-Top Notch Line

Most Durable Cover Ever Used! Outlasts Rubber 2 to 1! Perfect Fingertip Feel!

Wilson opens a new era in inflated balls with a new line... different in concept, outstanding in performance and durability.

Five years of experimentation and testing have been combined with chemical research and manufacturing know-how to produce this sensational TN-VINYL line. These exacting field and laboratory tests have proved this the greatest inflated ball line ever developed. Get a grip on a new TN-VINYL ball...football, basketball, soccer ball, volley or tether ball...it's another great Wilson First!

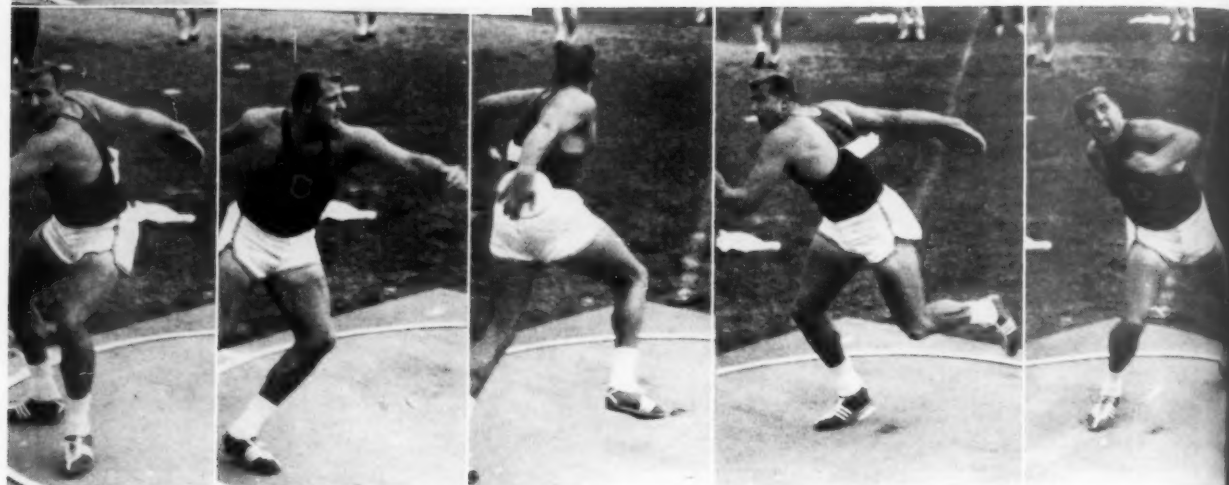
Win With Wilson

Watch for the colorful Wilson
brochure on this sensational new line.

WILSON SPORTING GOODS CO., CHICAGO (A subsidiary of Wilson & Co., Inc.)



RINK BABKA



THROWING the discus was popular in ancient Greece. Homer and others have written of ancient Greek heroes who scaled the stone unbelievable distances, actually less than 100 feet. We may conclude that the first discus was a smooth slab of stone, and possibly was used in unorganized competition as far back as the Stone Age. At the Louvre Museum in Paris there are several stones which were used in ancient Greece, and although round, they bear little resemblance to our present implements. Not only are they larger in diameter, but they have flat edges rather than the taper that marks our present discus. From pictures and statues such as Myron's Discobolus we know that the ancient Greek civilization was the first to glorify this fine event. In ancient times discus throwing was conducted from a small platform rather than from the ground. The discus throw has progressed and changed drastically, and present champions have so refined the art that the famous ancient heroes would scarcely recognize the event.

When the modern Olympic Games were revived in 1896, the discus event was on the competitive program. In those games not only was the throwing platform used, but the discus itself was also a challenge to foreign competitors. In fact, the eventual winner, Robert Garrett of Princeton University, borrowed a Greek implement because it was lighter and smaller than the one he had fashioned in America. Americans have tended to dominate the event ever since. Due to Garrett's Olympic victory and the interest created, the discus was added to our AAU track program the following year, and its weight and size were standardized. In 1897 the small 7-foot circle was established and C. H. Henneman of the Chicago Athletic Association became our first champion and record holder with a throw of 118 feet, 9 inches.

The man who made the first real contribution to both distance and style was the giant, Martin J. Sheridan of New York, who set seven world marks from 1901 to 1911. Sheridan's best

throw was 141 feet, 4 $\frac{3}{8}$ inches set from the 7-foot circle. The next world record holder, J. H. Duncan of the United States, had the distinction of breaking Sheridan's mark from the 7-foot circle in 1912 with a mighty heave of 145 feet, 9 $\frac{1}{2}$ inches, and then broke his own record the same year when the circle was enlarged to the present 8 feet, 2 $\frac{1}{2}$ inches. Duncan was the positive proof of the importance of turn when he astounded the track world with the excellent throw of 156 feet, 1 $\frac{3}{8}$ inches.

Several fine throwers approached 160 feet during the next twelve years, but war and world disorder prevented a real onslaught on the magic mark. In 1924, as a student at Notre Dame University, Tom Lieb finally broke Duncan's world mark, but Eric C. W. Krenz, the first of a long line of great Stanford University weight men, was the first discus thrower who exceeded 160 feet, but posted a world mark of 163 feet, 8 $\frac{3}{4}$ inches.

Another American, Paul Jessup of

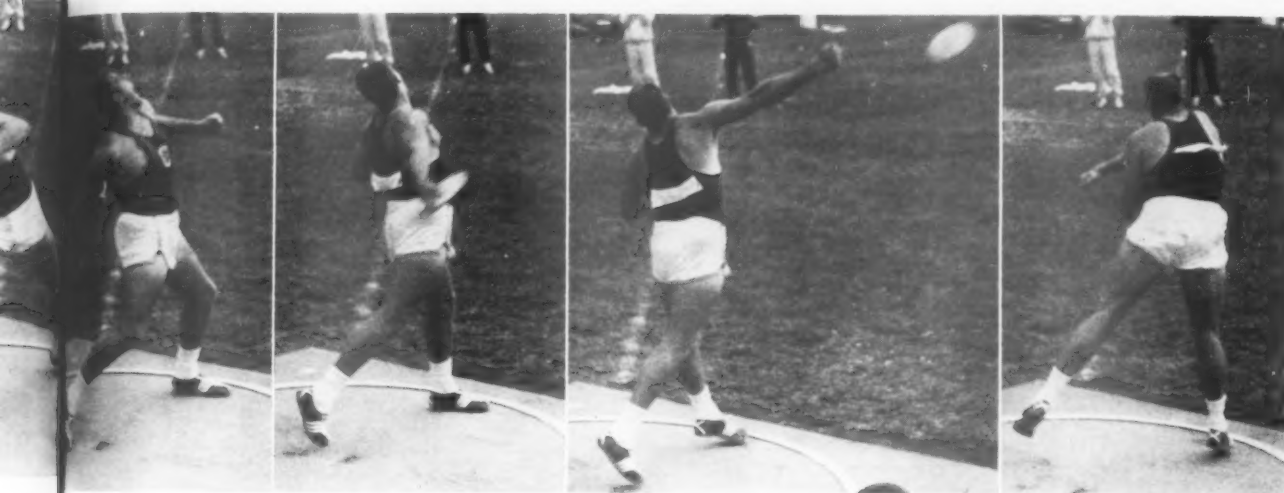
the University of Washington, approached 170 feet a year later when he posted 169 feet, 8 $\frac{7}{8}$ inches. It was not until five years later, in 1935, that Harold Anderson of Sweden turned the trick, and in 1936 Ken Carpenter of Southern California became America's first man to throw over 170 feet when he won the Olympic Games at 173 feet, 1 $\frac{13}{16}$ inches. Anderson's mark of 173 feet, 11 $\frac{3}{8}$ inches, made in 1936, was broken months later by Willi Schroeder of Germany who threw 174 feet, 2 $\frac{1}{2}$ inches.

Six years later the giant negro, Archie Harris of Indiana University, threw 174 feet, 8 $\frac{3}{4}$ inches, and five years later, in 1941, Robert Fitch of

threw of 190 feet, $\frac{7}{8}$ inches. However, his record was to be broken before it was officially approved. We were traveling on a train in Sweden with Iness when he learned that Gordien had broken the mark two months after he had set it. Sim Iness was a disappointed young man when he realized Gordien's throw was a remarkable 194 feet, 6 inches, and vowed some day to throw 200 feet. Had not injury ended Iness' career the following year, he might well have been the world's first 200 foot discus thrower, because most coaches agree that he had everything necessary for even greater performance.

Al Oerter and Rink Babka were the

a competitive event, there have been many different styles and forms used. In each style, whether knowingly or not, the coaches and athletes were constantly searching for more efficient methods of giving the discus greater centrifugal force while getting the athlete's body into position where he could apply maximum strength and body momentum to its flight. When the turn was introduced into discus throwing, the chance of carrying greater body momentum to a powerful throwing position, where the thrower could put more force upon the discus, improved greatly. However, with this greater potential, the more complicated technique pre-



the University of Minnesota became the world's first 180 foot discus thrower with a throw of 180 feet, 2 $\frac{3}{4}$ inches. In 1948 the remarkable Adolph Consolini of Italy surpassed Fitch with a throw of 181 feet, 6 $\frac{3}{8}$ inches to establish a world mark for the second time. Consolini had surpassed Harris' record in 1941 with a throw of 175 feet at Milan, and twelve years later, in 1955, at the age of 39 threw 186 feet, 11 $\frac{1}{2}$ inches. This great athlete also competed in the 1956 Olympic Games while still reigning as European champion at the age of 40. Consolini's world mark was to last just a year, as another former University of Minnesota athlete, Fortune Gordien, threw 185 feet, 2 $\frac{3}{4}$ inches at Lisbon, Portugal, and then surpassed that throw with a 186 feet, 10 $\frac{7}{8}$ inches at Hameenlinna, Finland the same year.

Sim Innes, the 1952 Olympic champion, became the first human to reach 190 feet with the discus. On his final throw at the National Collegiate Championships in 1953 at Lincoln, Nebraska, Sim made history with a

first discus throwers to reach 200 feet. Since Fitch, Consolini, Iness, Gordien, Oerter, and Babka showed the way, the once ultimate of 180 feet has become commonplace in major competition. Karl Merta of Czechoslovakia, Terene Kliis of Hungary, Otto Gregalka of Russia, and other Europeans plus a host of Americans have sailed the discus over that once magic mark on many occasions. Refinements in technique and more concentrated training methods have led to this sudden surge in the level of performance.

Editor's Note — Sequence photos of Rink Babka appear with this article. In the second part of the article to appear next month, there will be sequence photos of Al Oerter. Pictures of Sim Iness' actual record-breaking throw appeared in the February, 1954 issue. Sequence photos of Fortune Gordien and Bob Fitch appeared in the May, 1948 and May, 1947 issues.

Technique of Discus Throwing

Since discus throwing was started as

sented a multitude of problems.

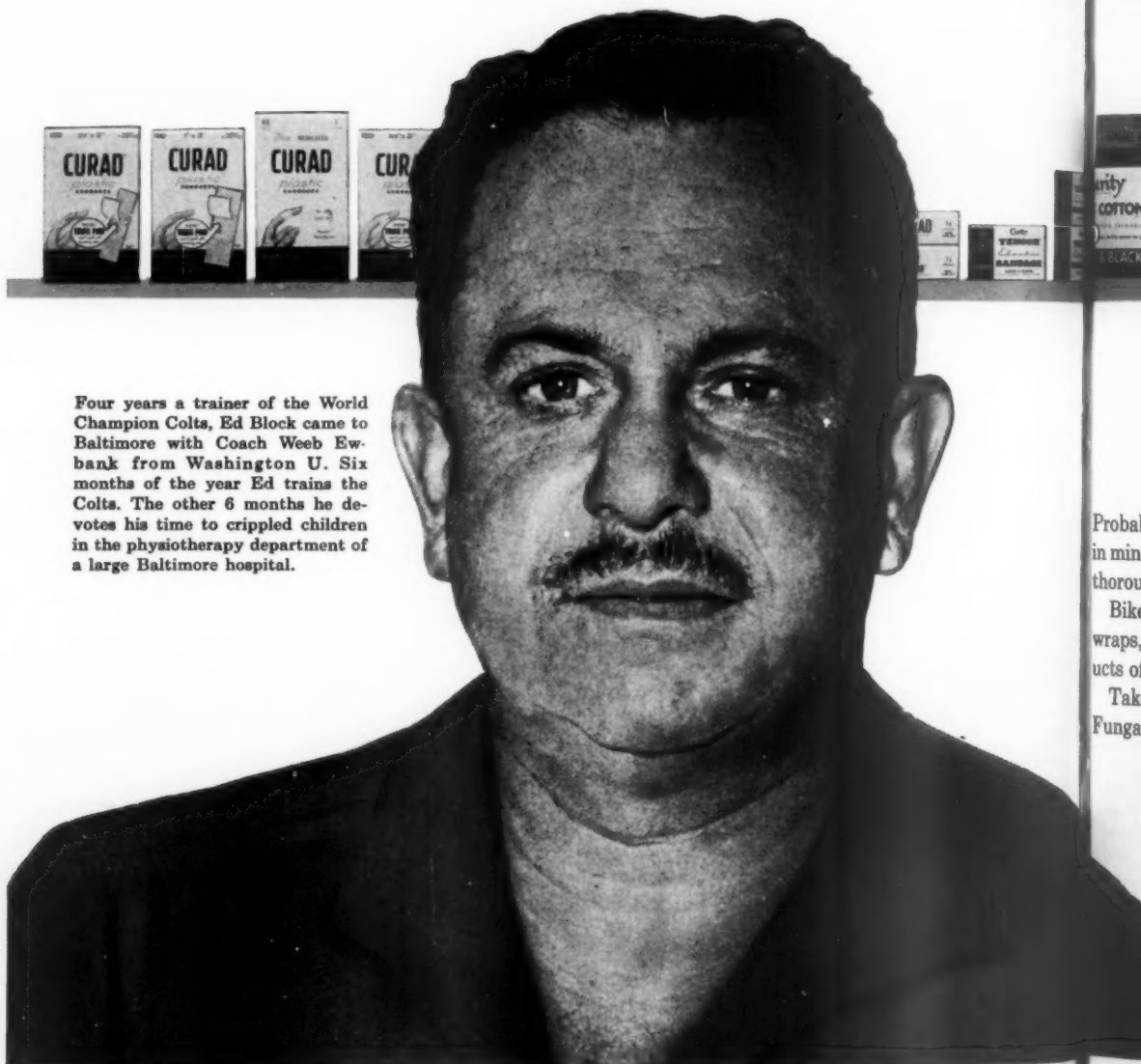
In 60 years of competitive discus throwing experimentation, the world's finest throwers have arrived at two distinct and efficient methods of turning and delivering the discus, and it is on rare occasions that a top-flight discus thrower does not use a style based on one of these two forms. Occasionally, big strong men like Darrow Hooper of Texas A. & M., still become champions without using any turn at all. We can only wonder what these men could have done with an efficient turn.

The evolution of discus throwing has brought us through many stages. Following the era of throwing from a platform, discus men threw from a standing position, and then with a step and a half pivot to the right. When throwers began to turn in the circle, they started with one complete rotation then 1 $\frac{1}{4}$, then 1 $\frac{1}{2}$, and now the majority use very nearly 1 $\frac{3}{4}$ turns from the preliminary discus swing to the release. The evolution of the foot action has kept pace with this desire



ED BLOCK, Athletic Trainer of the World Champion Baltimore Colts

"I like the big Bike Line-up"



Four years a trainer of the World Champion Colts, Ed Block came to Baltimore with Coach Weeb Ewbank from Washington U. Six months of the year Ed trains the Colts. The other 6 months he devotes his time to crippled children in the physiotherapy department of a large Baltimore hospital.

Probab
in min
thorou
Bike
wraps,
ucts of
Take
Fungal



altimo Colts, says:

"Bike's got everything I need"



FROM CHEMICALS TO CURAD® BANDAGES
BIKE HAS THE BEST, MOST COMPLETE LINE
IN MODERN TRAINERS SUPPLIES

Probably the most important question to keep in mind while choosing trainers supplies is: How thoroughly developed is each product?

Bike supplies—including supporters, tapes, wraps, pads and first aid material—are the products of years of laboratory research.

Take the Foot and Body Powder and the Anti-Fungal Spray. Both contain an exclusive wonder

drug called a-Carboxythionisole. This helps provide the most effective treatment available for the fungus infection known as Athlete's Foot.

And this also demonstrates the kind of up-to-date efficiency you'll find in every Bike product. Why not do as Ed Block of the Colts and so many other prominent trainers do? Count on Bike for your every need.

*Sold only by
Sporting Goods Dealers*

BIKE®

THE KENDALL COMPANY

BIKE WEB SALES DIVISION

to increase rotational velocity of the discus. With momentum and speed being recognized as key factors in successful throwing, it is not difficult to follow the whip of successive changes of lower body discus action. When turning started, the athlete made every effort possible to keep contact with the ground for stability in the new style. As he whirled across the circle, he actually stepped over his left foot instead of pivoting on it. Then he learned that a little more speed could be given to the turn by pivoting as he stepped around.

The pivot turn is generally credited

to Tom Lieb, although he may not have originated it. Often a world record breaker such as Lieb is credited with a revolutionary new form when actually he may only have called attention to it by his record performance. In any case Lieb did use a pivot turn when he set his world mark in 1924. This pivot by Lieb was accomplished by keeping one foot on the ground at all times. How deliberate and slow, by present standards, his turn was is revealed in an early account of discus throwing a year after he set his record.

"When the discus is back as far as

the waist and arm rotation will permit, and the muscles are all coiled somewhat, the rotation to the left begins. The pivot is made on the ball of the left foot then on the ball of the right . . . The first part of the revolution in the turn is done slowly . . . then when he (thrower) starts to pivot on the right foot and starts the second revolution his rotary speed is increased . . ."

The next innovation introduced into discus throwing was the incorporation of a hop with the pivot of the left foot. Eric Krenz of Stanford, Paul Jessup of Washington, and others called so much attention to this hop incorporation style that it became universally popular.

The true pivot style (one foot always on the ground) is no longer used in competition, but is still employed by many coaches in instructing beginning throwers. However, the modified pivot style is still in evidence. Some fine throwers such as James Dillion of

"a magnificent job of detailing one of the most powerful offenses devised in recent years!"

SCORING POWER WITH THE WINGED T OFFENSE

by

FOREST EVASHEVSKI
Head Football Coach
State University of Iowa

DAVID M. NELSON
Head Football Coach
University of Delaware

With this Offense Iowa . . .

- ★ Set new Rose Bowl offensive record in total yards gained.
- ★ Set new Rose Bowl offensive record in total yards gained by rushing.
- ★ Tied Rose Bowl record for most first downs.
- ★ Was 1958 leading offensive team in the nation.
- ★ Set Big Ten record in 1958 for most yards gained.
- ★ Iowa No. 2 Team in Nation. (L.S.U. using same offense was No. 1)
- ★ Iowa Big Ten Champs in 1956 and in 1958.
- ★ Iowa 1957 and 1959 Rose Bowl Champs.

These are just a few of the reasons why the contents of this popular book will interest you. Whether or not you actually use the offense yourself, you will be playing teams that are using the Winged T, so you'll need copies of this valuable book to plan your defense.

SCORING POWER WITH THE WINGED T OFFENSE presents practical ready-to-use methods. There is a wealth of information in this BIG BOOK . . . information you've been looking for. It contains 240, 8½ x 11 inch pages. It is beautifully printed, completely illustrated with more than 300 illustrations, including 20 photo-action series. Cloth bound and only \$5.00. Order a copy for 30 days free inspection. If you find that it does not fulfill your expectations, return it, and you owe us nothing.

WM. C. BROWN COMPANY

Publishers
Dubuque, Iowa

DON CANHAM graduated from Michigan where he was NCAA high jump champion in 1940. Since becoming track coach at Michigan in 1948 his teams have enjoyed spectacular success. He has written three books on track and cross-country and edited the clinic notes for the International Track and Field Clinic. Canham has compiled film strips on many sports which he distributes through "Champions on Film."

Alabama Polytechnic Institute, 180 feet, 8 inches; and Consolini, 186 feet, 11 ¼ inches use much more pivot and less hop than the majority of present throwers. They certainly use less hop than Gordien and his disciples, so there is little doubt that the pivot style we know and use today is sound and practical.

When the hop was introduced, it became much easier and quicker for a discus thrower to get around his left foot, and at this stage throwers began to turn more toward the rear of the circle. It was obvious that with more turn, greater rotational velocity could be created, and thus more force could be exerted on the discus by the athlete. Present-day athletes generally use 1 ¾ turns with the pivot style prior to release. Many discus throwers are

(Continued on page 50)

¹Lieb, Thomas J., "Discus Throwing," *The Athletic Journal*, May, 1925, Vol. 5, No. 3, p. 6.

GET THESE BOOKLETS AT YOUR SPORTING GOODS STORE HOW TO IMPROVE YOUR SPORT SERIES

Here are the **best** instruction books available on twenty popular sports. Each one designed and written by outstanding experts in each sport — such as "Phog" Allen on basketball, Ned Day on bowling, Ken Davidson on badminton, etc. Each booklet contains step-by-step picture demonstrations and tips on how to improve **form** and **skill**. Hundreds of actual photographs.

TWENTY POPULAR SPORTS

APPARATUS ACTIVITIES

For boys and men. Expert techniques for all apparatus events.

ARCHERY

Tips on shooting, scoring, rules.

BADMINTON

Covers grip, swing, all strokes.

BASEBALL

Perfect manual for kid leagues.

BASKETBALL

Offense, defense, and shooting tips.

BOWLING

Over 300 bowling tips by Ned Day.

COMPETITIVE SWIMMING

Teaches how to improve skill in competitive swimming.

DIVING

An informative diving manual by Bruce Harlan, Ohio State diving champion.

GOLF

The **LAST WORD** on grip, swing, and stance.

GYMNASTICS

For girls and women. Demonstrates balance beam, parallel bars, free exercise and vaulting.

LIFESAVING

Shows how to practice good water and boat safety, rescue methods and artificial respiration.

SOFTBALL

Emphasizes fielding and pitching tips.

SWIMMING

Fundamental techniques of swimming. Tells how to enjoy water, overcome fear.

TENNIS

Will improve tennis play immediately.

TRACK AND FIELD

Dashes, jumps, relays, etc.

TRAMPOLINING

Introduction, beginning, stunts and advanced stunts.

TUMBLING

Outlines basic skills of a growing sport.

TUMBLING—Advanced

Explains singles and doubles tumbling, balancing and free exercise.

VOLLEYBALL

Tips on service, drives, spiking, etc.

WRESTLING

Shows basic holds and counter movements.

50¢
EACH

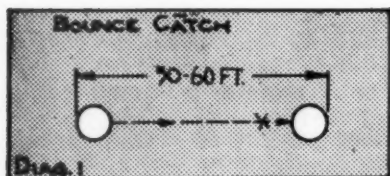
GET THESE BOOKLETS AT YOUR
LOCAL SPORTING GOODS STORE

or write to

The Athletic Institute
209 S. State Street Chicago 4, Illinois

THE Athletic Institute

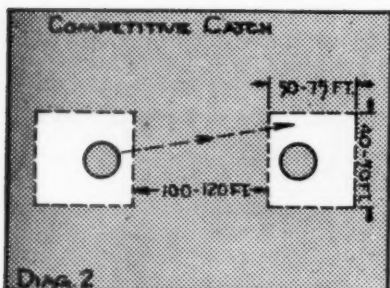
A NON-PROFIT ORGANIZATION DEVOTED TO THE ADVANCEMENT
OF ATHLETICS, RECREATION AND PHYSICAL EDUCATION



bodies behind it. When catching, the player's body is bent at both knees and at the waist. The ball should be caught either just as it leaves the ground, or at the height of its bounce, using a backhand if necessary. Players stand from 50 to 60 feet apart (Diagram 1).

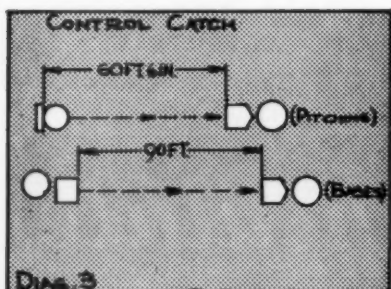
Playing Catch With a Purpose

By GLENN G. DAHLEM



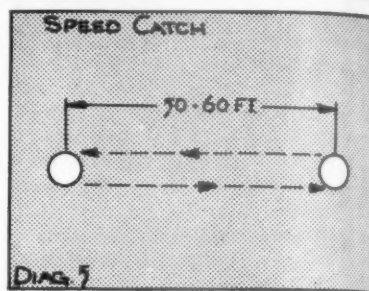
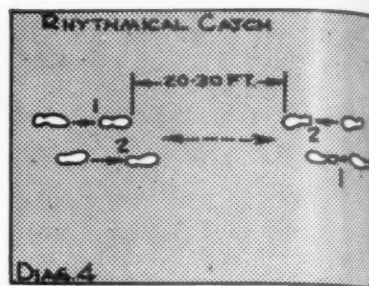
THE simplest, most fundamental baseball drill, merely throwing a ball back and forth between two players, has been used for a long time as a warm-up procedure. However, playing catch can be adapted to a number of special practice situations. Each of these situations is designed to develop a particular game skill.

Bounce catch is a very enjoyable variation and, as a rule, helps to improve reaction time, and develop the ability to dig out low throws. The ball is thrown to bounce once, just in front of the receiver, who must handle it cleanly. Players should be coached to keep their eyes on the ball, and their



Competitive catch is just what the name implies, and can be relied upon to retain player interest. It involves throwing grounders and flies at an opponent, who is fielding a certain area, in an attempt to cause him to commit an error. Competitive catch will foster conditioning, and develop fielding proficiency in general. It will teach going left and right for grounders and up and back for flies. The players stand about 100 to 120 feet apart (Diagram 2).

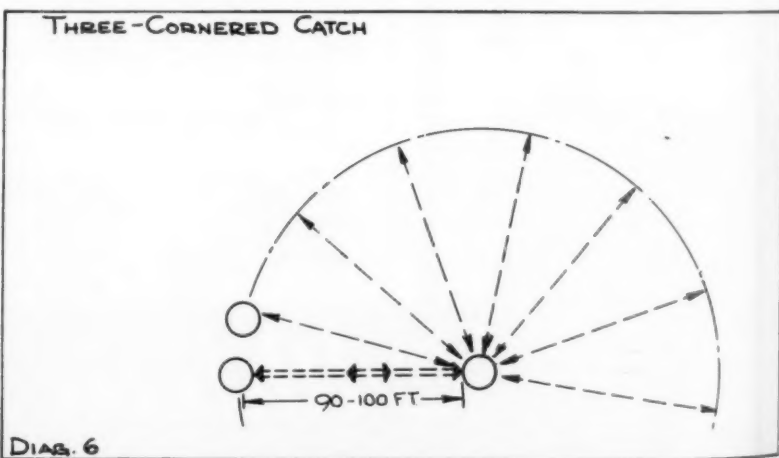
Control catch is designed to teach accuracy, and it can also be played competitively. This drill can be refined into a regular pitching situation by having a catcher call balls and strikes, walks and strike-outs. This version is popular with the younger set, and teaches wind-up, stretch, and all the trimmings of pitching a game without batters. A simpler version of control catch involves only throwing



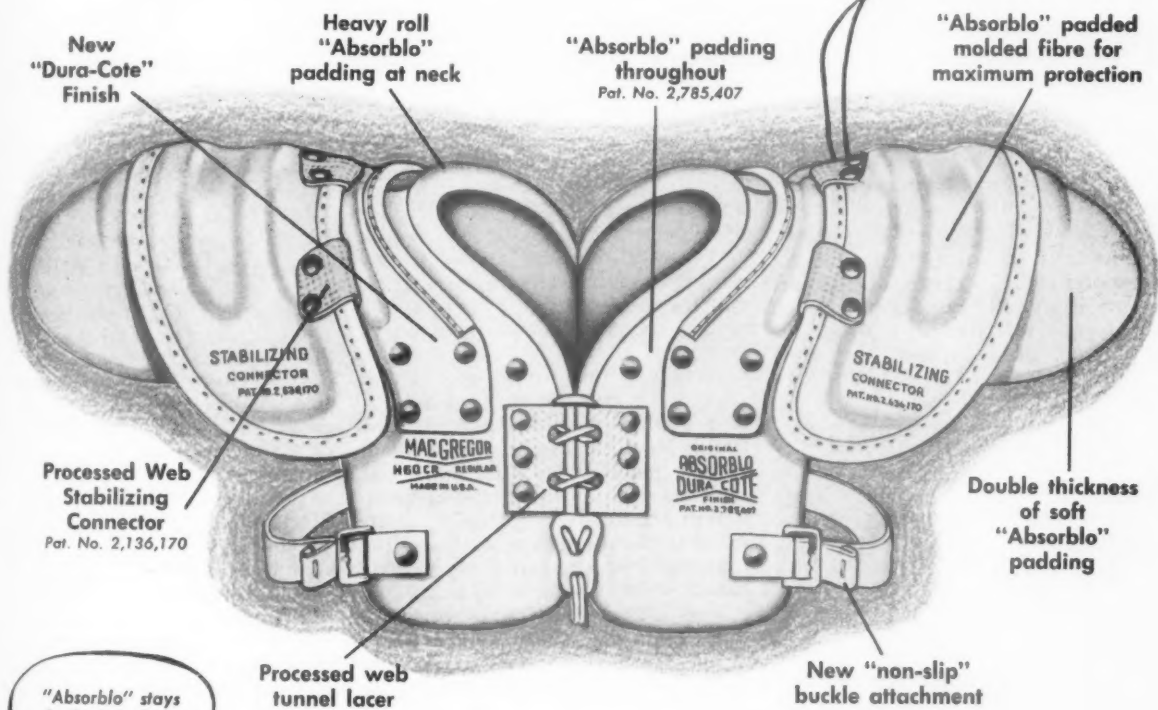
and targeting, and is used to teach catchers and infielders to throw accurately to the bases. Distances normally used would be 60 feet for control pitching, and 90 feet for throwing to bases (Diagram 3).

Rhythmical catch is an exercise to use in developing form, particularly in the case of pitchers. It gives the players a chance to perfect their rhythm and balance, and to engage in self-analysis. The two players stand from 20 to 30 feet apart, and toss the ball to each other. Every movement, especially those of the player's legs, and all bodily weight shifts, are done at half speed. An effort is made to place the feet in the same position for every throw, and to standardize all movements. Each player advises his teammate whether he is achieving this goal or not.

(Concluded on page 47)



Now, Absorblo has a sparkling "DURA-COTE" finish!



The most asked for modern football protective equipment is even better in 1959! MacGregor has made a major improvement on a really fine product. "Absorblo" is dressed in a new white "Dura-Cote" finish. "Dura-Cote" makes Absorblo easier to clean, completely waterproof... adds great new tenacity.

Be sure to get the best. Specify MacGregor Absorblo shoulder pads, hip pads, knee pads, kidney pads, and bruise pads.



THE MACGREGOR CO., CINCINNATI 32, OHIO

FOOTBALL • BASKETBALL • BASEBALL • GOLF • TENNIS • TRACK



Illustrations 1 and 2 show the use of the safety apparatus as the subject is performing the heel-raising exercise on a board two inches thick. The barbell is placed between the two vertical pipes preventing the subject from falling forward or backward with the weights. Holes were driven into the pipes at 24, 50, 60, and 70 inches. Steel pins are inserted into the holes to eliminate the possibility of the weights falling on the subject.

Increase the Explosive Power of Your Athletes

By EDWARD S. STEITZ

Director of Athletics, Springfield College, Springfield, Massachusetts

THE use of weights to increase leg strength in athletes and in the vertical jumping of basketball players is a research project which is now in its third year at Springfield College.

The first reports of our program were outlined and presented as a part of the Research Committee report of the National Basketball Coaches Association at its last meeting. Since then

we have been pleasantly surprised at the large number of college basketball coaches who have signified that they have adopted our procedures in the use of weights to increase leg strength and vertical jumping. We have received a similar number of letters and telephone calls from high school coaches requesting details of our program.

Weight training studies were carried on for the past three years as part of a master's degree requirement by Philip Ness, Charles Sharos, William Brown, and Douglas Riley under our chairmanship and with the cooperation of Dr. Emery W. Seymour, director of tests and measurements, and Dr. Clayton T. Shay, director of graduate studies.

The results of our studies which are based upon the overload and interval training principles showed that at the end of a five-week period those taking part in the weight training program had significantly increased their vertical jump and leg strength.

Brown and Riley found that the

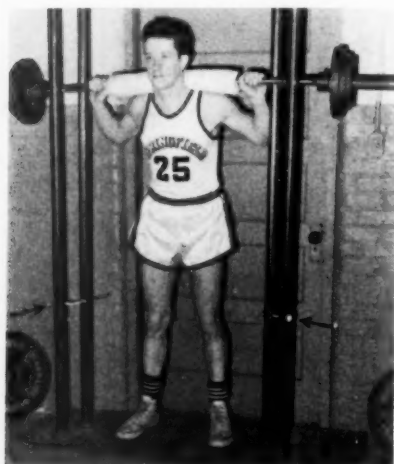
weight training group showed an increase of 2.9 inches, while a controlled group showed an increase of .6 inches. The 2.9 increase showed a t of 8.7 which is significant beyond the .01 level of confidence. The leg lift in the weight training group showed an increase of 161 pounds, while a controlled group showed a decrease of 70.4 pounds.

Ness' and Sharos' results showed that the weight training group increased 3.23 inches and indicated a t of 5.37 which showed significance at the .01 level of confidence. The mean of the weight training group increased 215.49 pounds with a t of 7.31 which is significant beyond the .01 level of confidence.

The following salient points represent a condensation of the procedures used in the Springfield College weight training program for basketball players. As will be noticed, the procedures are simple and not time-consuming.

1. The candidates perform the weight training program three times

(Continued on page 64)



Illustrations 3, 4, and 5 show the subject performing the deep knee bend exercise. Notice the bar which is padded with sponge rubber and covered with a towel in order to distribute the subject's weight more evenly over his shoulder and provide more contact.

Illustration 6 shows the safety factor of eliminating the possibility of the weights falling on the subject in the event he has difficulty performing the deep knee bend exercise.



heel-rai-
types pre-
into the
ability of

e
es

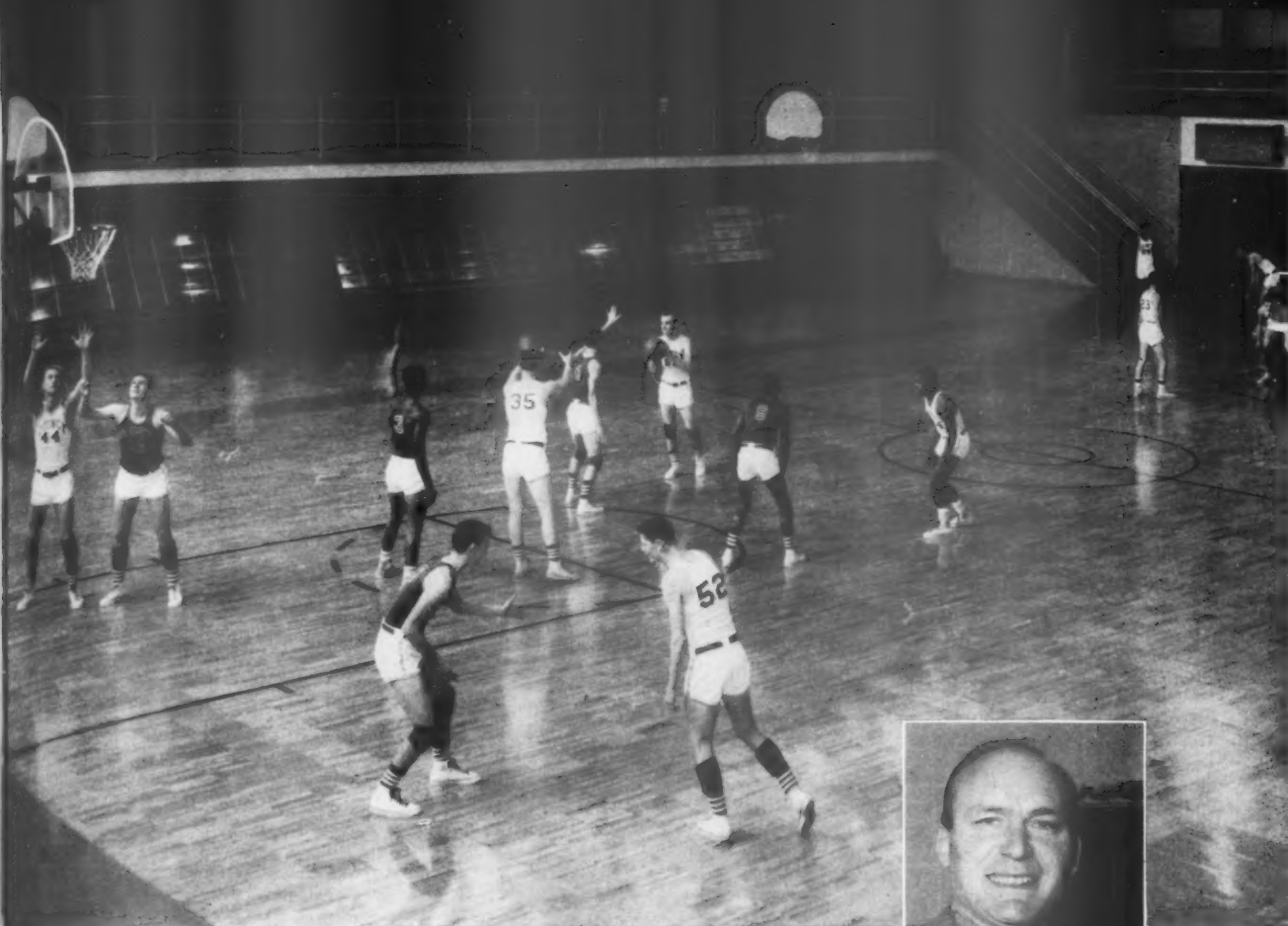
and an in-
controlled
6 inches
t of 8.7
the 10
g lift in
owed an
e a con-
crease of

showed
group is
icated a
cance at
he mean
increased
31 which
level of

nts repre-
procedure
ge weigh
ball play
procedure
suming
orm the
ree time
)

and exerci-
el in orde
re comfort
ights falli
d exerci-

JOURNAL



'SEAL-O-SAN' withstands the heavy traffic of 120 weekly gym classes,'

says Howard Dewell, Basketball Coach
and Athletic Director, Quincy Senior High School, Quincy, Illinois

"Our gym floor is blemish-free and easy to maintain. Each week we have 120 class periods in our new gym plus many other activities. I seriously doubted whether any floor sealer could withstand this heavy traffic. That is until Joe Murdock of Huntington Laboratories told us about Crystal Seal-O-San. We sealed our new floors with it and after more than a year's use, our floor is in fine condition, shows no sign of wear and is easy to maintain."

Thousands of school officials insist on Seal-O-San because they find it is the only product that keeps floors beautiful under the most rugged conditions. It gives a durable, non-skid, glare-free surface that's resistant to scuffing and rubber burns.

Your Huntington representative, the Man Behind the Drum, is only a phone call away. Call him or write for his name today.

HUNTINGTON LABORATORIES
INCORPORATED

Huntington, Indiana • Philadelphia 35, Pennsylvania • Toronto 2, Ontario



The Quincy Senior High School gymnasium was completed in September, 1957. It will seat 5,000 and provides four stations for teaching. Architects were Behrensmeier and Horn, Quincy, Illinois. Member of AIA.



By **ROBERT T. KRETCHMAR**
Baseball Coach, Oberlin College, Oberlin, Ohio



Daring on the Base Paths

THE more we coach, the more we become convinced that the high school or college team which shows daring on the base paths has a decided advantage over their more conservative or more orthodox opponents. The explanation is quite simple. The one skill of the game which young ball players possess that most resembles their professional counterparts is the ability to run. A number of high school and college baseball players can run as well, if not better, than some of the players in the major leagues. But how many high school and college players can throw or field as well? Since the basic ingredients which make up success or failure on the base paths include running, throwing, and fielding, we believe the advantage, generally speaking, is with the runner.

Operating on this basic philosophy, we believe it is desirable for both high school and college teams to have the following offensive maneuvers in their repertoire of strategy.

The Steal

The difference between a successful and unsuccessful steal of second base is only a few feet or about a tenth of a second. In other words, the defensive margin for error is extremely thin. Involved defensively to thwart an enterprising base-runner are two good throws plus a catch and a tag. However, in a situation of this kind there can be many slips. How often have we seen a catcher who is unable to make a play at second because the pitcher's throw was low or poor? We know few high school or college catchers who can take a pitch ankle high and throw out a man at second. Then, too, if the pitcher's throw to the plate is in a good position for the catcher to handle, he still has the challenging task

of throwing the ball accurately to second or third as the case may be. How many young catchers have a rifle-like arm? However, assuming that the pitcher has thrown the ball well and the catcher has a powerful and accurate arm, then the task of the second baseman or shortstop taking the throw and making the tag remains. At this point many defensive plays break down, either out of fear of being spiked or lack of confidence in the catcher's arm. We have seen high school and college second basemen and shortstops move ahead of the bag (toward home) to take a good throw, only to have the base-runner slide safely out of their reach to the outfield side of second.

Having been a college catcher, we can think of other reasons for catchers not getting the ball to second accurately and in time on steal plays. It may be that the pitcher failed to hold the man to his base properly, the second baseman or shortstop was slow in getting to the bag or the weather was cold with the wind blowing in from center field, making throwing difficult. Perhaps in the light of all of this it is not surprising that our team has been successful in more than 90 per cent of its attempted steals over the past four seasons.

ROBERT KRETCHMAR graduated from Oberlin College in 1940 where he played three years of varsity baseball, basketball, and football. During the war he served as a lieutenant commander in the U. S. Coast Guard. He returned to Oberlin College five years ago, after receiving his doctor's degree from Columbia and teaching for five years at Ohio State University.

Then, too, we like the steal play because it puts pressure on the defense—sometimes just enough to make them blow a game. A few seasons ago our team lost a 2-1 game in which our pitcher threw a one-hitter while we were gathering seven hits. In the ninth inning one of the opposing players attempted to steal third. Our catcher threw the ball out into left field and with it the game. Things were evened up last season when we won a 1-0 game in a similar fashion.

It stands to reason that a defensive team which has to worry about men on the bases is taking some attention away from the hitter and thus weakening itself.

Hit and Run

Until several years ago we were of the opinion that this play was good for the professionals but not for younger players. It is a rather common belief among coaches that the hit and run is beyond the capabilities of most high school and college players. However, when we heard a college coach explain that his team had stolen 20 bases the year before on hit and run plays which had misfired, we realized we had been wrong. This play is now an integral part of our offense and has been an asset to us. Again this is a play which places pressure on the defense. Catchers may start to call for pitch-outs they can ill afford, pitchers may become jittery and hurry their throws, and the men around second may leave their positions too early to cover their territory properly. Actually the number of times our players have come through with hits on this play, let alone to right field, have been few, but in the process we have stolen a number of bases and have broken up many potential double plays.

(Continued on page 47)

ADIRONDACK

RIGHT *in Balance...*

...Craftsmanship...

...and Performance

ADIRONDACK

THE BAT WITH THE
MOST ON THE BALL

Join the **ADIRONDACK**
STAR Hit Parade

N. S. G. A. SHOW • FEB. 1-5 • RMS. 830-1-2

ADIRONDACK BATS INC.
Northern
White Oak
ADIRONDACK
302
DOLGEVILLE, NEW YORK
MADE IN U.S.A.

THE FOOTBALL DRILL OF THE MONTH

PREPARED BY GEORGE ALLEN

6

THE DRILL

HOW TO DRILL FOR FUMBLE PREVENTION

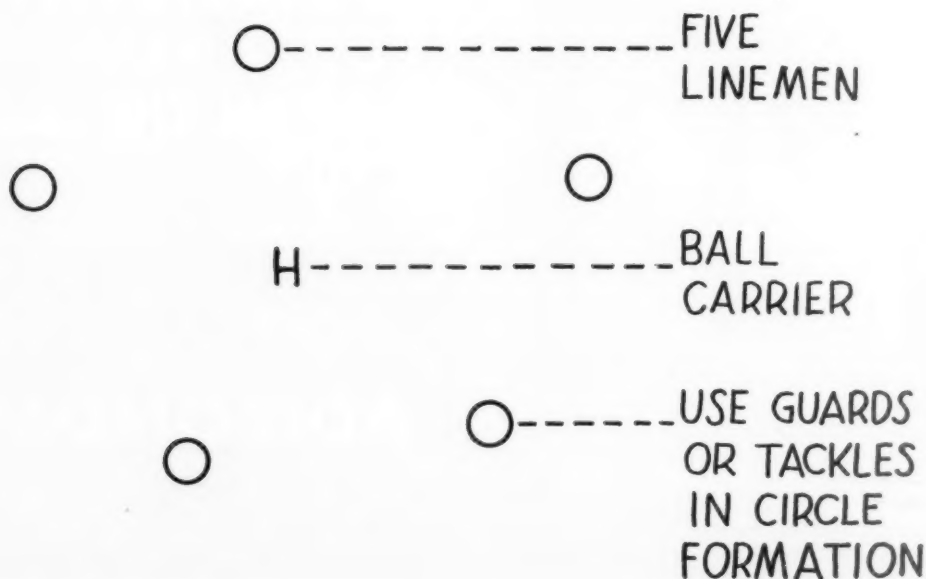
PURPOSE

This drill was designed to force the backfield men to carry the ball properly.

INSTRUCTIONS

1. Have five linemen form a circle. Allow approximately two yards between each lineman.
2. Place a back inside the circle with a football.
3. The back must try to get out of the circle without losing the football.
4. The linemen may grab arms, and the ball, but they do not tackle.

The backs should be told that tension on the ball should not be extremely forceful, but firm until the whistle blows.



Let Lou Little* show you why he picks The J5-V



"A really good football has a tacky feel in the leather that lets the player know he's in control of the ball when he grips it.



"How can you test for this feel and control? It's easy. Just pick up the ball with your passing hand, like this . . .



"Now tighten your grip. If the ball doesn't slip—if it stays put so you're sure of it—you've got a football your boys can control.



"I know only one football that can pass this simple test under all weather conditions . . . and that's the Spalding J5-V."

**Member of Spalding's Football Advisory Staff*

Only Spalding's J5-V with "Grip-Guard" can pass this test in any weather!

Here's why: Only the J5-V has "Grip-Guard"—an exclusive Spalding tannage process that permanently locks the tacky feel in the leather. Even in wet weather—even after repeated cleanings—the J5-V stays dry, tacky, easy to control.

Like all Spalding merchandise, the improved J5-V is guaranteed—unconditionally!

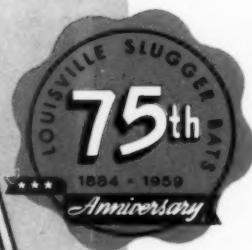
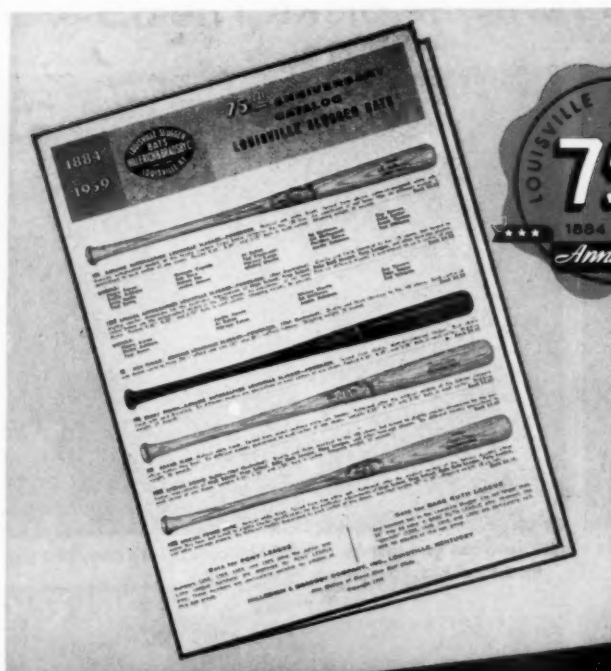
SPALDING
sets the pace in sports

Other famous coaches who prefer the J5-V:

Paul E. Brown, Head Coach, The Cleveland Browns, 1957 champions, National Professional Football League: "The weatherman can be rough on a ball handler offensively, but the J5-V is a ball that you can operate with under most any weather conditions."

Ralph Jordan, Head Coach, Auburn, Named 1957 number one team in the nation by Associated Press, says: "The Spalding J5-V football was a life-saver for us in 1957. Auburn played seven games on wet fields, yet we fumbled less than ever."

Art Lewis, Head Coach, West Virginia University, says: "A coach is always shooting for perfection in performance. This improved J5-V shows me that Spalding has just about achieved it."



LOUISVILLE SLUGGER BATS

The 75th Anniversary Catalog of genuine Louisville Slugger Bats for Baseball and Softball includes new autographed models of Thomas, Jensen, Cepedo and Cerv in the famous 125 assortment. Also included is the splendid array of specials and junior models for Babe Ruth Leaguers, Pony Leaguers, Little Leaguers, etc.

The line of nineteen Softball bats shown include a number of new models to meet every need.

Send for your **FREE**
H & B CATALOGS for 1959

GRAND SLAM GOLF CLUBS

"New and Incomparable"

Best describes the 1959 Grand Slams shown in our new golf club catalog. There are outstanding features galore such as Levelume plating on all iron heads except the superb Atlas 90 model, which features the finest Stainless steel heads; genuine Persimmon heads on all woods; Rib Guide grips; etc. See and read about them!

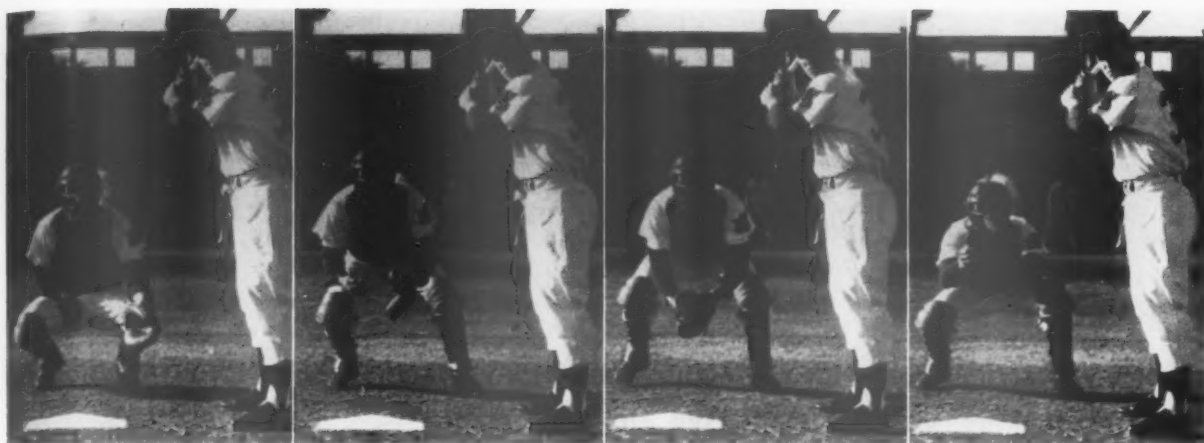
GRAND SLAM Golf Clubs



They're READY NOW!

Both catalogs are beautifully produced in full color and contain complete information on both of these famous lines of athletic equipment. Order your supply today. Write Dept. AJ-9

HILLERICH & BRADSBY CO., Inc., Louisville 2, Ky.



Series A—THE STANCE

The Play of the Catcher

By **FRANK SANCET**
Baseball Coach, University of Arizona

A catcher on a baseball team must pay attention to a number of small details which add up to the correct way of doing the job. It is these small details which, combined with a natural ability and good build, will make one player a better catcher than another. Many of the things he does in his position will depend on his own comfort. Professional players will say that the best way to play a position is the way it is the most comfortable for the individual player.

There are fundamentals, both minor and major, that must be learned. Variations of these fundamentals, which make it easier for a catcher to do the right thing in every game, add up to his particular style. He should learn the fundamentals first, and especially how they are important to the correct playing of the position. A catcher will

not develop style until he has gone out and worked at his position in many games. By that time style will come to him naturally.

Contrary to most beliefs, size itself is not too important in the selection of a catcher. There are good big catchers and good small ones. However, stamina and agility are necessary.

In selecting a catcher, the coach should look for these qualities: sturdiness in build, agility afoot, quick hands, and a strong, accurate throwing arm. Also of utmost importance are courage, mental alertness, and qualities of leadership.

Stance

Squatting behind the plate is

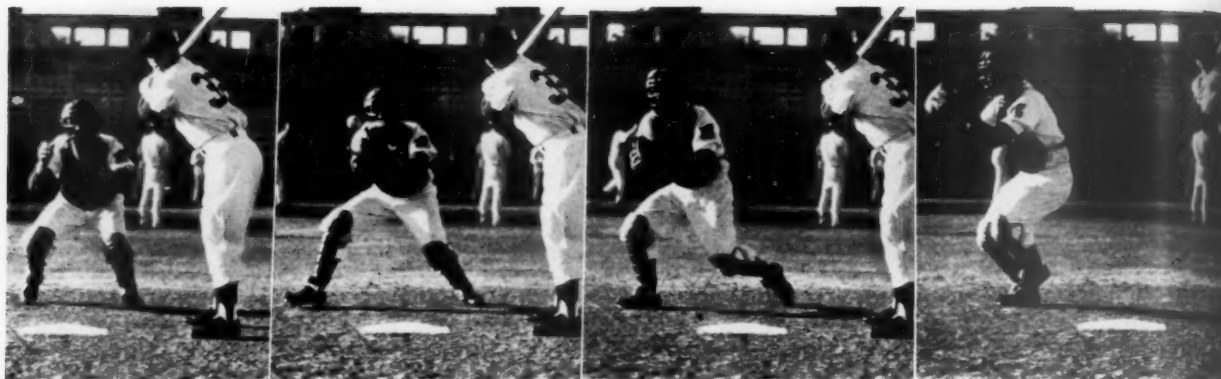
thought of, and must be executed in terms of convenience for the pitcher and the catcher. It is important that he get down directly in line with the plate, because many pitchers will use points of a catcher's body as targets. If he is squatting squarely in line with the plate, a catcher's shoulders are almost a perfect indication of an inside pitch, while his knees show the outside corners.

The catcher's position should be as close as possible to the batter, without interfering with him. In this position, he is able to present a better target to the pitcher and being close to the plate, he can handle low pitches and foul tips better.

While giving signals to the pitcher (Illustration A1), the catcher should

Series B—THE THROW TO SECOND





Series C—THE THROW ON OUTSIDE PITCH TO RIGHT-HANDER

Series D—THE THROW ON OUTSIDE PITCH TO LEFT-HANDER



be in a squat position — feet comfortably apart, knees turned out slightly, and left forearm resting on his thigh. His gloved hand extends beyond his left knee. The throwing hand gives the signal in the crotch or inside the leg.

As soon as the signal for the pitch is given, the catcher should raise up a little from the squat position (Illus-

trations A2, A3, and A4), and take a comfortable stance with his feet well apart, and his right foot slightly behind his left. His throwing hand should be relaxed and the fingers closed loosely with the thumb along his index finger.

He should not change the position of his hands until after the pitcher has started his delivery. If the pitch is be-

low the waist, his glove hand should be held out with the palm toward the pitcher, fingers pointing down. These balls must be caught with an upward motion. If the pitch is above the waist, the fingers of the catcher's hand should point upward. Balls above the waist should be caught with a downward motion.

Throwing

In throwing, a catcher should use a

Series E—PLAYING THE DOUBLE STEAL





(Illustrations E3, E4, E5, and E6). Proper balance should be maintained at all times because the secret of good throwing is balance.

Fielding Bunts

The catcher is required to field many bunts and balls which are topped and roll slowly a short distance from the plate.

An alert catcher is quick to break from the plate on bunts. Removal of the mask and starting into the infield come simultaneously, because split-seconds determine the method of both fielding and throwing the ball. A ball to either side of the pitching mound should be fielded with the catcher's body to the third base side of the ball, regardless of where the throw is to be made. In many instances, lack of the necessary speed and accuracy in throwing will cause poor execution of the play. The proper technique, and one that will insure no pushing or squirting of the ball is as follows:

On a ball to the first base side of the mound, the catcher should move out quickly to the ball (Illustrations F1 and F2). Good throwing is based on good balance. Accuracy and speed of the thrown ball are dependent on how quickly the proper balance is established, plus the speed of releasing the ball. As the catcher nears the ball, he should move his body to the third base side (Illustration F3), but he must come directly over the ball (reaching for it causes poor balance and poor throwing). The glove hand should be placed in front of the ball to stop the roll (Illustration F3), and then the ball is scooped into the mitt. At this point, he should bring his hands and the ball to his waist (Illustration F4), from which position an accurate snap throw can be made (Illustrations F5, F6, F7, and F8). The reason for pushing, or for the ball squirting comes from not being directly over the ball and reaching for the ball out in front, making it necessary

snap overhand throw whenever possible. This type of throw gets the ball away faster. When throwing to second base on balls directly in front of the catcher (Illustration B1), the ball and glove should be carried quickly to the right ear. As the catcher's right hand swings over to hold the ball, his fingers automatically encircle it in the proper throwing position (Illustrations B2 and B3). At the same time the ball is being carried to position, the catcher's left foot is stepped forward in a direct line with second base. His right foot is behind because it is his pivot foot on a throw and, therefore, puts him in a position to stand up immediately and throw in any direction (Illustration B4).

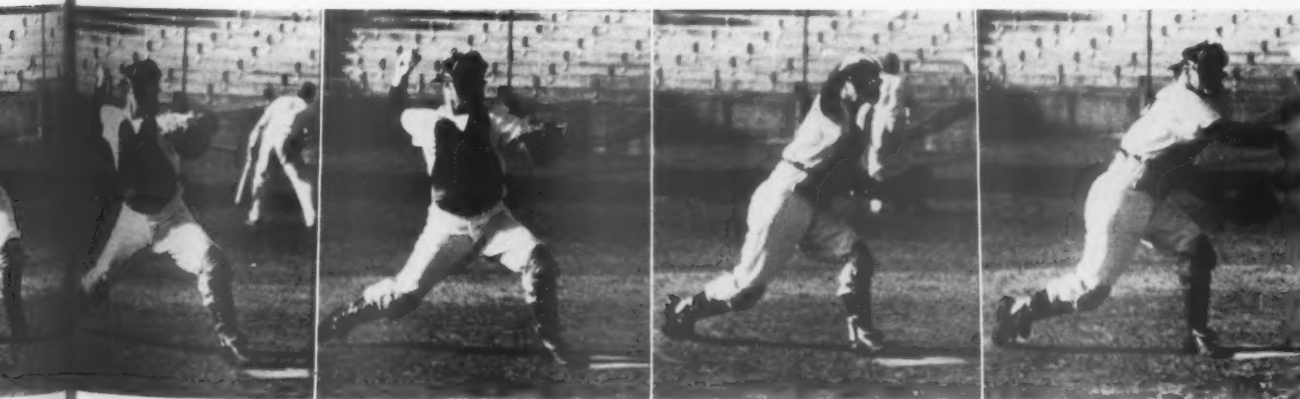
Throwing presents special problems to a catcher because he usually has a batter in front of him to obstruct his throw. To get around the batter, there are certain fundamental movements in a catcher's footwork.

If the catcher has a right-handed batter at the plate and the pitch is outside, to his right, the footwork for the throw is as follows: from the catching position, step to the right with the right foot (Illustrations C1 and C2), to catch the ball. This takes him clear of the batter. From this position, he takes one step forward with his left foot and throws (Illustrations C3, C4, C5, C6,

C7 and C8). In this manner, the least amount of time is wasted in getting the throw away.

For a throw to second or first, from an outside pitch to a left-handed batter, the step is made first with the left foot (Illustration D1). The ball is centered (Illustration D2). Then the catcher's right foot is placed behind his left foot (Illustration D3), and the left step is taken as the throw is started (Illustrations D4 and D5). The automatic carrying of the ball and the glove to the right ear helps in getting the ball away with a minimum of time and effort.

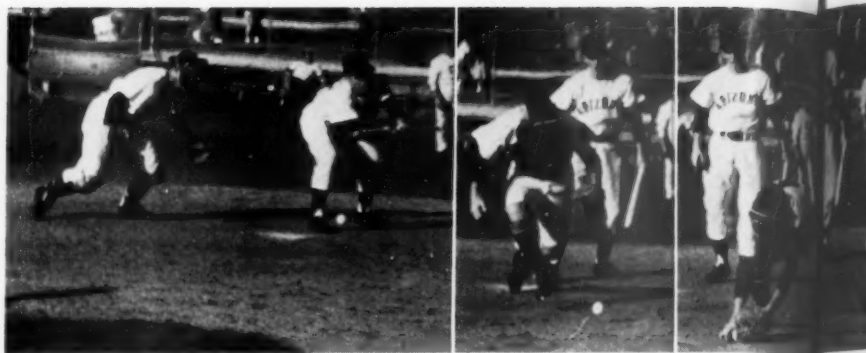
One of the most difficult throwing plays for a catcher is the double steal situation with runners on first and third. With a double steal in the offing, a catcher can often make the runner on third look bad by bluffing a throw to second and throwing to third. Ordinarily, the ball should be thrown to second. This fundamental should be executed with the same technique that is used in any other throwing situation. First, the catcher should center the ball by stepping in that direction with the foot on that side (Illustration E1), followed by the proper carrying of the ball to shoulder position. This maneuver is combined with *looking* at the runner at third (Illustration E2), as the throw is made



Series F—FIELDING BUNT ON FIRST BASE SIDE

to grab it with one hand. The ball is thrown too quickly from an unbalanced position, thus causing the pushing or squirting.

A ball down the third baseline will be fielded in the same manner. Here again, as the catcher approaches the ball (Illustration G2), he maneuvers his body to the third base side and into a throwing position. The mitt is



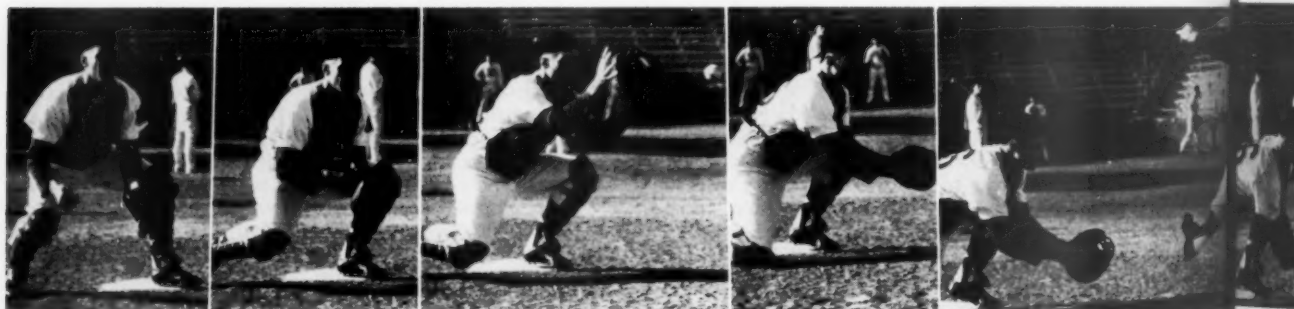
used again to stop the ball and the catcher's bare hand is used to scoop the ball as shown in Illustration G3. As soon as the ball is fielded, the catcher's weight is transferred to his right foot (Illustration G4). Then the throw is executed underhand, sidearm or overhand (Illustrations G5, G6, G7, and G8).

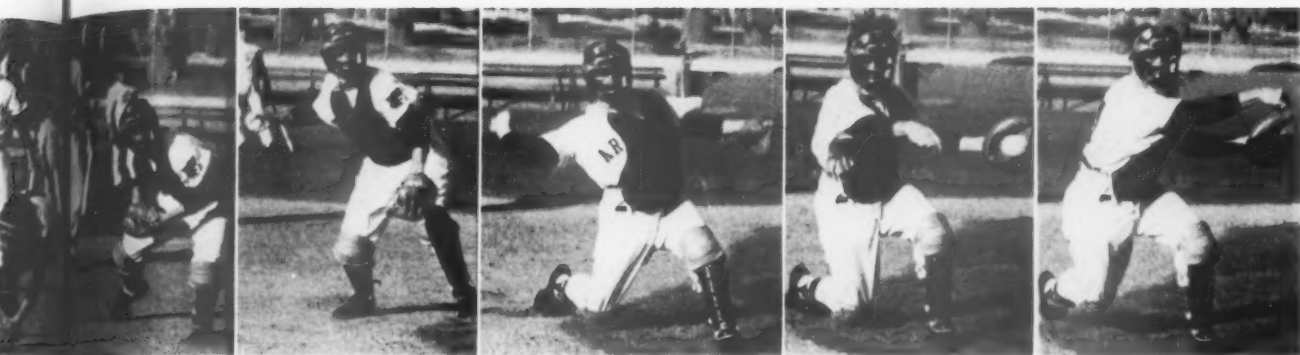
Tag At the Plate

Probably the most rugged play a catcher is called upon to make is to tag a man at the plate. Runs count in baseball, and if a runner is coming into the plate with a chance to score, he is not going to let anyone or anything stand in his way. A catcher has

to be built powerfully to take the full force of a runner's body crashing into him as he attempts to guard the plate, tag the runner, and keep the ball from bounding out of his hands from the impact when he and the slider meet.

Because of the ruggedness of the play, we like to have our catchers play the tag a certain way. On tag plays





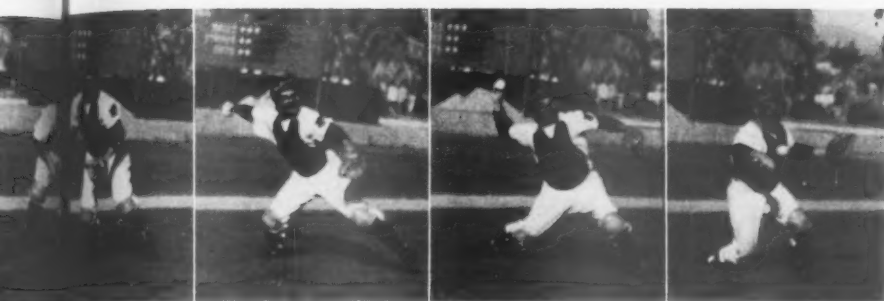
Series G—FIELDING BUNT ON THIRD BASE SIDE

over the catcher. Upon receiving the ball (Illustrations H3 and H4), the catcher drops down to his right knee (using his left leg and shin guard to block the plate), and puts the mitt which is holding the ball down in front of the runner (Illustration H5). The runner can do nothing but slide into the ball (Illustrations H6, H7, and H8). The catcher should be careful to make the runner slide into the back of the mitt, to avoid having the ball knocked out of his hands and to protect his hands.

If the throw comes from the right side of the diamond (first base side), the catcher will place his right foot on the left corner of the plate on the third baseline side (Illustration I1), showing about one-third of the inside of the plate. The play is then the same as for any infielder. As he receives the ball (Illustration I2), he drops to his right knee (Illustration I3), and forces the runner to slide into the back of

Series H—TAG ON THROW FROM LEFT SIDE OF DIAMOND

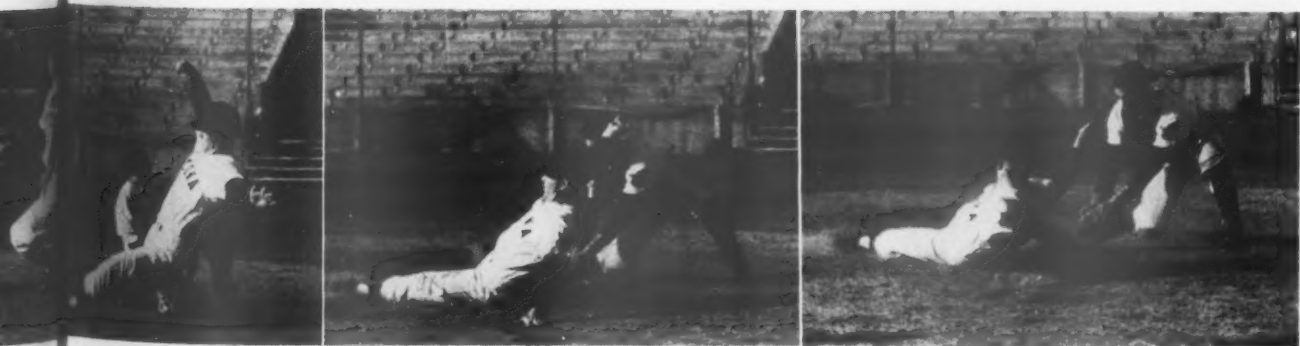
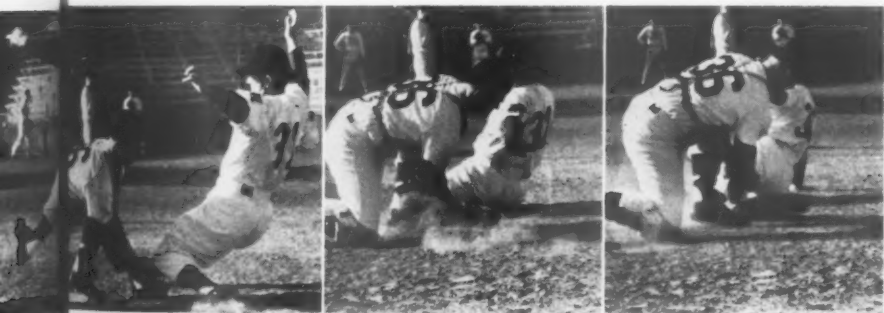
Series I—TAG ON THROW FROM RIGHT SIDE OF DIAMOND

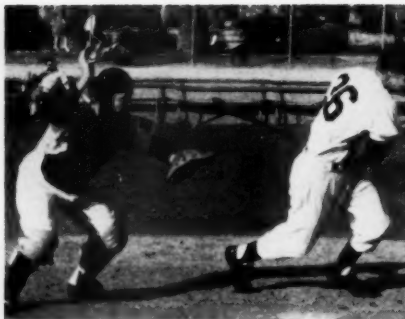


with the ball coming from either the infield or outfield, the catcher squares off facing the thrower. He does not block the plate completely but shows the runner a part of it.

On throws from the left or third base side of the diamond, we like to have our catcher take a position facing the thrower with his left foot on the

front left corner of the plate (Illustrations H1 and H2), exposing about one-third of the back side of the home plate. Our theory is that if a catcher shows a runner even a small part of the plate, he will slide for it. Thus the catcher knows exactly where the slider will be, and in most instances he will be sliding rather than trying to run





Series J (Left)—CATCHING FOUL POP FLY

his mitt (Illustrations I4, I5, and I6). The straight-up left leg will stop a runner's slide should he slide straight in, thus giving the catcher added protection.

The proper method of tagging a runner is to hold the ball with the bare hand within the pocket of the glove, and the actual tag is made with the back of the mitt. Tagging with the bare hand is not recommended, as the runner's spikes may cut the catcher's hand.

Fielding Fly Balls

One of the most important responsibilities of the catcher is to catch fly balls near the plate.

The most important thing to remember about foul flies is that under normal conditions they drift back toward the infield.

The first thing a catcher must do on pop flies is to discard his mask in the direction opposite to which he is going. This action prevents him from stepping on the mask and possibly missing the catch. Ordinarily, he knows in what direction the ball is hit by seeing its flight from the bat. The fact that a right-handed hitter usually raises the ball to the right and a left-handed hitter raises it to the left is an aid in making the proper start for the ball.

If the catcher has a good distance to run, he immediately slaps the mask off with his thumb (Illustration J1), and runs to catch the ball (Illustration J2). The direction of the wind, the sun, and nearness to the stands are also important factors in catching pop flies. The catcher should keep these in mind. Also, he should know

(Concluded on page 63)

Series K (Left)—CATCHING POP FLY





FULL COVERAGE FOR A HALF GAINER

Capture all the action on extra-fast Cine Kodak Tri-X Movie Film

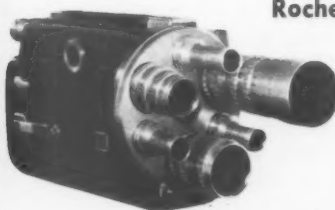
No matter what the rating for *degree of difficulty*, every dive deserves careful scrutiny.

And the way to be sure both coach and diver have a chance to *study* every move is with *movies*—the easy way to improve performance where form is important. To get full coverage, Cine-Kodak Tri-X Reversal is your film. It's *extra fast*—gives you sharp, detailed pictures without cumbersome special lights.

For *viewing* your films, you'll find the Kodak Analyst Projector just the ticket. Built to coaches' specifications, it has variable speeds, remote reverse, and a table-top viewer. Use it on your desk; project your pictures on a standard screen for group viewing.

Among coaches who know, you'll find the Kodak K-100 Turret Camera is the top choice for shooting movies. You get a 40-foot run with a single winding—50 seconds of action at 32 frames per second. Three lenses in quick-change turret mount provide for normal, wide-angle, and telephoto coverage to give you the action you want. Variable speeds let you shoot slow motion. Rugged and well built, it's the camera you'll use for years.

Get the complete rundown on Kodak movie equipment and films for sports analysis. Write for a free copy of bulletin V3-21.



Perfect pair for showing and shooting movies for sports analysis. The Kodak Analyst Movie Projector puts the show right on your desk. And the Kodak K-100 Turret Camera puts you in command of any movie-making situation.

EASTMAN KODAK COMPANY
Rochester 4, N. Y.

Kodak
TRADE MARK



Training Program for a Champion High School High Hurdler

By **BOB STOUT**

Track Coach, Theodore Roosevelt High School, Fresno, California

KEN PRETZER of Roosevelt High School in Fresno, California ran the 120-yard high hurdles in 14 seconds flat on April 25, 1958 at Ratcliffe Stadium, site of the West Coast Relays, to win the Fresno City high hurdle championship. Coach J. Flint Hanner of Fresno State College acted as meteorologist for the meet. No aiding wind was recorded at the time of the race. The time was one-tenth of a second slower than George Hearn's year-old record of 13.9 seconds. The following week Ken ran 14.1 seconds to win the North Yosemite League high hurdle championship on the same track.

Ken's training program resulted in a high degree of perfection in high hurdling. A rigorous training program will make necessary a prolonged series of activities both physical and mental, aiming for excellence of performance in a specific skill; or it is the sum total of purposeful and directed effort toward an athletic achievement.

Since a training program involves a prolonged period of time and the mental as well as the physical characteristics of a boy, it is wise to give careful thought when selecting likely hurdle candidates. An adage worth consideration is: *The boy made a good coach of me.* In selecting a beginning hurdler, the following are, in our opinion, important and necessary characteristics of a potential champion:

1. Does he like to hurdle? This quality is of primary importance. It is impossible to develop a high degree of perfection in hurdling without deriving satisfaction when performing the event. Physical attributes necessary to be a good hurdler are of little value if the boy does not enjoy the

activity.

2. Is he persistent? Persistence is a must. Hurdlers are not developed fully in one season. In order to achieve excellence in hurdling, persistent practice over a long period of time is required. Many discouraging performances are likely along the way. An athlete must be especially diligent to achieve excellence.

3. Is he a willing worker? Many obstacles, physical and mental, may be overcome if a boy is willing to practice diligently. In many instances, this practice may be beyond the requirements of the coach. Coaching suggestions can be made by the dozen to a beginning hurdler, but suggestions should be aimed toward basic faults in fundamentals. Constant work by the beginner on fundamental weaknesses will accomplish the job most consistently.

4. Is he well-coordinated? Observing a boy for grace and ease of motion is of value in selecting a hurdle prospect. If a boy falls over his feet, so to speak, he is not likely to develop into a successful hurdler. Usually an aggressive basketball forward is a suitable candidate. If this boy can become interested, a coach may have a *natural*. A boy who is a basketball player will usually have good height and many actions used in basketball carry-over. The stop and go action, quick turns, jumping, and the development of peripheral vision which are used in basketball are all helpful in hurdling.

5. Does he have character? A boy is an investment which is made by the coach. The investment is in time and effort. Each hurdler has individual differences. A coach must study these traits and if necessary make changes, improvise or occasionally

capitalize on these individual differences. In order to make proper decisions, the coach must understand the physical limitations of the boy as well as his mental attitudes. To know these limitations and attitudes a great deal of thought and observation are necessary on the part of the coach. He should look for a dependable boy who has high aspirations. A coach will be wise to invest in sound stock.

Ken had each of the characteristics mentioned. He had a *natural* hurdler's physique. He was big and strong — 6 feet, 2 inches, and weighed 170 pounds at graduation. Ken was quite a rational individual and had a mature attitude even as a sophomore. Ken had only average speed but possessed an abundance of courage and determination; he was a willing and diligent worker. Ken was also versatile and well-coordinated; he was an outstanding end and halfback on the football team and a member of the basketball squad. All of these factors were an aid in coaching Ken and they were pertinent to the success he achieved.

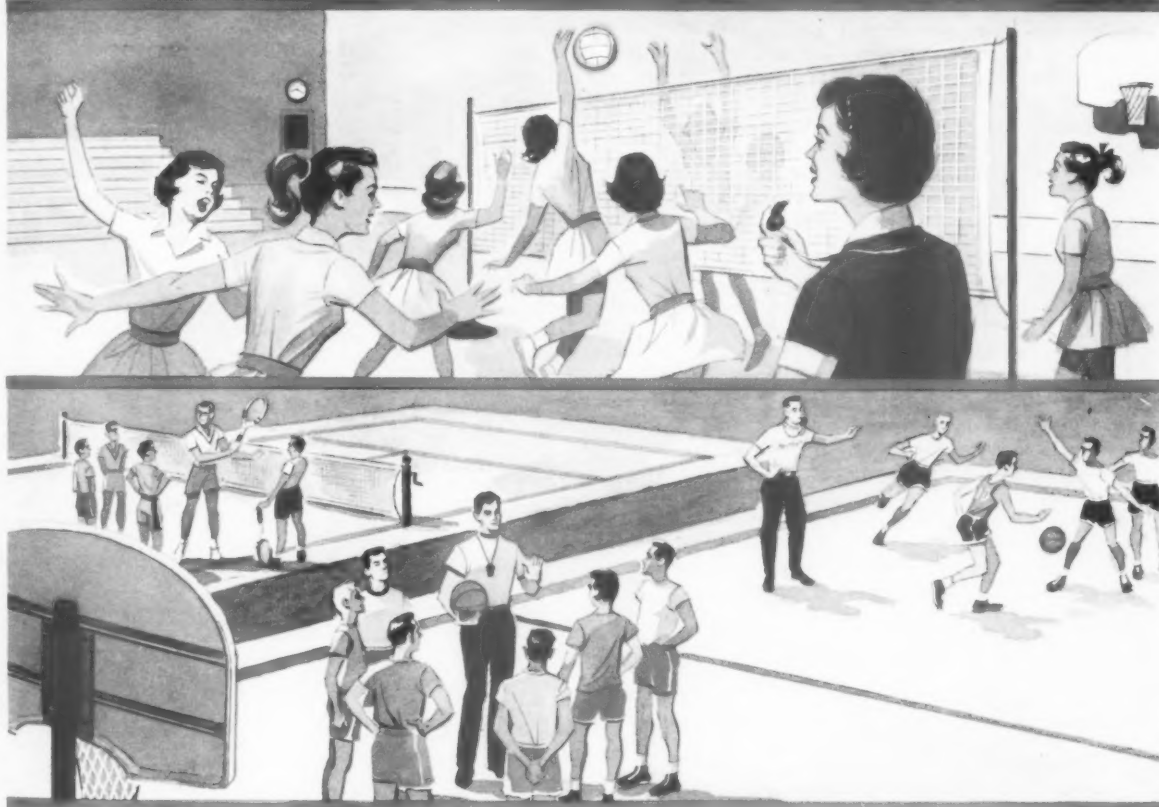
To give a detailed description of the training program used by Ken would possibly be of little value in coaching another boy. However, it may be beneficial to study the progress he made as a high school hurdler.

Ken began running the high hurdles as a sophomore. Most of his races during the year were at the 70-yard distance. This race consists of five hurdles placed 10 yards apart. The distance to the first hurdle is 15 yards and the distance to the tape after the last hurdle is 15 yards. Ken's best time for the 70-yard race was 9 seconds flat. The following year, his

(Concluded on page 37)

THE LINE FOR YEAR 'ROUND PLAY...

Pennsylvania



Indoors, outdoors, playground, athletic field or gym, Pennsylvania offers a ball to match the abilities of every age group and the requirements of every game. Years of use have proved Pennsylvania is tops in quality, durability, appearance and performance. And the prices on Pennsylvania rubber-constructed athletic products are set to please the budget-minded.

So whatever your athletic activity, from playground to varsity, Pennsylvania has the product for your program. Specify Pennsylvania Athletic Products on every order. For complete details, consult your sporting goods representative or write direct to us for a catalog.

"Preferred for Performance"



THE GENERAL TIRE & RUBBER COMPANY • Pennsylvania Athletic Products Division • Box 951 • Akron 9, Ohio

CATCHING THE BASEBALL

FLY BALL OVERHAND

Demonstrated by GORDON LUND

Captions by JIM SMILGOFF, Taft H.S., Chicago

When catching a high fly ball overhand fashion with the thumbs of both hands close together, the receiver should keep his feet apart and his left foot forward to give good body balance and ease of movement in changing direction rapidly. This body position also cuts down on elapsed time in making a throw, since the forward movement of the left foot on the catch is the first leg movement on the throw. Notice that the receiver's arms are well extended overhead, and his eyes are following the ball all the way into the glove. The receiver's arms should bend slightly at the elbows in order to cushion the ball as it nestles into the glove. He should catch the ball toward the central portion of his body.

FLY BALL UNDERHAND

In making the high fly catch underhand fashion, a right-handed thrower places his left foot forward for balanced body position, and for smooth, easy flow into throwing position. Both hands are turned palms upward, with the little fingers close together. As the ball settles into the glove, the receiver's bare hand covers it to insure the catch, and also to grip the ball in case of a necessary throw. Notice the extended arms are held fairly high as the ball nestles into the glove which is held at chest or shoulder height. The right leg swings around behind the left one immediately after the catch in order to place the body in throwing position. Holding the arms in a relaxed position, with the hands fairly loose, should insure grace and rhythmic body action in making the catch.

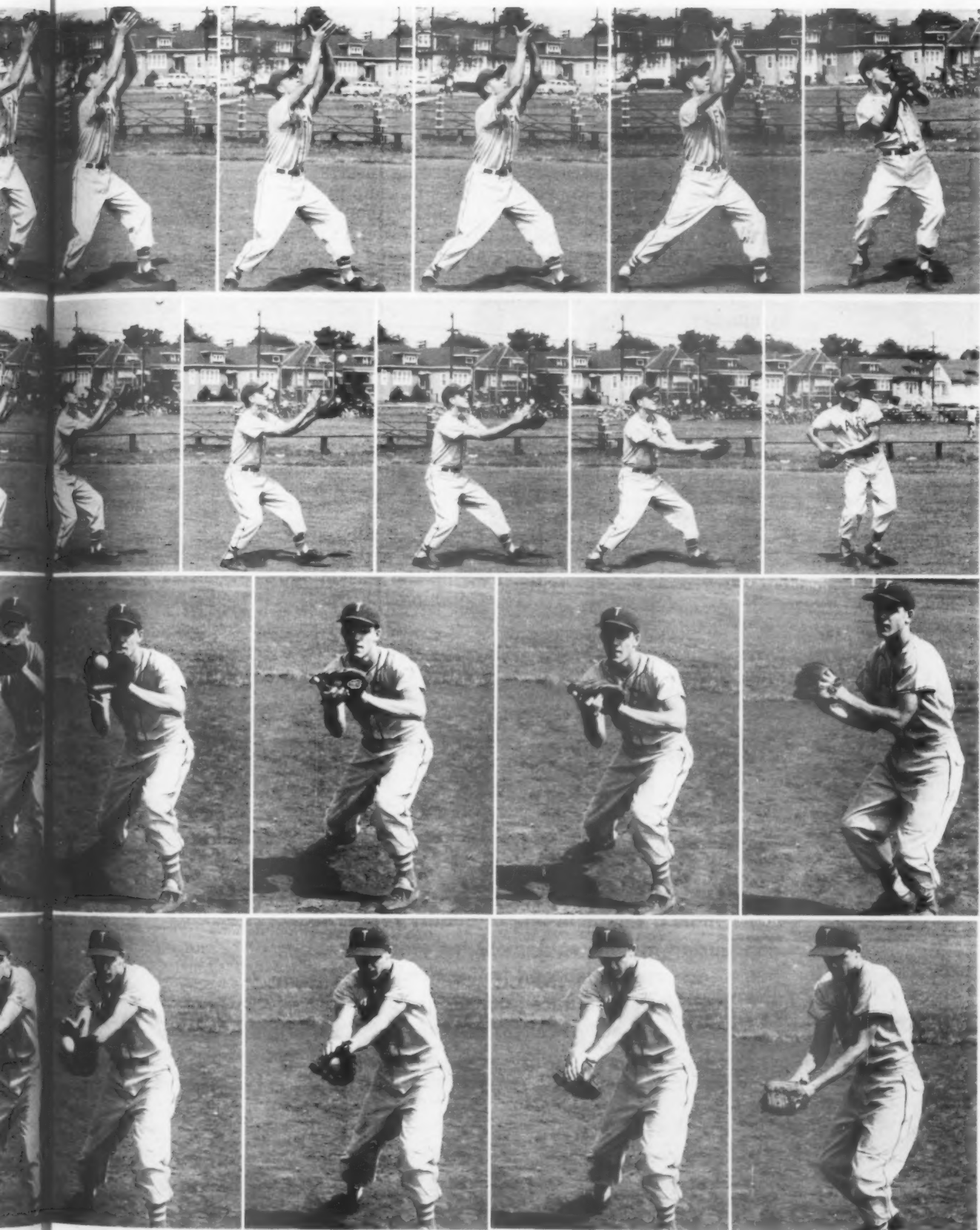
THROWN BALL ABOVE THE WAIST

In receiving a thrown ball, the receiver should give the thrower a target at which to throw by placing his glove chest high. The receiver's body position is a slightly crouched one, with the right foot back ready to spring in any direction should the throw so demand. The receiver's arms are well extended, but they recoil slightly as the ball settles into the glove. This cushions the ball for a soft, graceful catch. The receiver bends forward slightly at the waist in order to meet the shock of the oncoming ball. His body weight is over the balls of both feet as the thrown ball approaches. His bare hand closes over the ball as soon as it nestles into the glove in order to secure the catch, and a fast grip for a subsequent throw. Notice his eyes are following the ball all the way into the glove. His elbows are out away from the fielder's body which allows for free and easy arm movement.

THROWN BALL BELOW THE WAIST

In receiving a thrown ball waist high or below the waist, it is best to place the glove palm up for the catch. Bend the glove hand wrist downward as the ball approaches, thus exposing more pocket surface toward the ball. The bare hand is held above the glove ready to close over the ball as it settles into the pocket. The receiver's eyes follow the ball all the way into the glove. His arms are extended well forward and his hands are relaxed. Tense hands due to taut muscles create a hard pocket into which a ball cannot settle safely and easily. The receiver bends slightly forward at the waist. His body weight is on the balls of both feet ready to change position at the slightest misdirection of the throw. The knees are well bent, and his legs are relaxed.






FOR YOUR BULLETIN BOARD

This insert, as is true of the preceding inserts of the series, was designed to spark interest in your program. They may be removed from the Journal without damaging either the insert or the magazine. In order to remove the insert, lift the staples on the preceding page, and then fold the staples back. Additional copies of most of the previous inserts are available free. Please order by number.

4. The Dribble in Basketball
5. Shooting in Basketball
6. Volleyball
7. Relay Racing
8. Kicking the Football
9. Softball
10. The Pivot in Basketball
11. The High Jump
12. Tennis
13. Passing the Football
14. Blocking in Football
15. Passing the Basketball
16. Catching the Baseball




PB-6
Basketball




PIC-12
Softball




BB-90
Baseball




PS-6
Soccer Ball




SF-L
Pennfin



DM-T
Swim Mask



PG-10
Golf Ball



X-76
Tennis Balls



PTC-6
Tetherball

PENNSYLVANIA


Offers a complete line of quality rubber-constructed athletic equipment for every use . . . in regulation and junior sizes.

For top performance and budget pricing, specify **PENNSYLVANIA**


THE GENERAL TIRE & RUBBER COMPANY
PENNSYLVANIA ATHLETIC PRODUCTS DIVISION
BOX 951 • AKRON, OHIO



PV-6
Volleyball



PGB-13
Playground Ball



PF-6
Football

(Continued from page 32)

junior year, he ran the full 120-yard high hurdle race. He won his first race in 15.9 seconds. During the season Ken's time varied, his slowest time being 16.3 seconds, then steadily improving to a good 14.8 seconds. It stayed at 14.8 seconds until late in the season. After laying off for about ten days, he ran 14.4 seconds in winning a Junior Olympic race.

After Ken began to run consistently near the 15-second mark, emphasis on the times made by other outstanding high school hurdlers may have aided in bringing him to the 14-second mark. It is interesting to note that only 12 high school high hurdlers have run 14 seconds or better. Three of these boys ran 14 seconds flat in 1958.

A charge without hesitating to the first hurdle is vital to good time. We tried to encourage Ken to feel contempt toward the first hurdle. This hurdle was a barrier which had to be battled. The first hurdle was the only hurdle in which we emphasized the approach. Our concern with the other nine hurdles was in having Ken come off each hurdle with maximum speed.

The snap-down of the lead leg was of particular trouble to Ken during his junior year. He was greatly improved in his senior year. Ken used a stiff-leg action with his lead leg. The knee acted as a fulcrum. Rapid swinging of his lower leg to a stiff locking position at the knee resulted in an improved snap-down. This movement would be similar to slamming a door only to have it bounce back with equal force when the latch did not catch. This technique could cause an interruption in the continuous action desired of the lead leg or it could cause movement beyond the horizontal position desired. We feel this technique worked with Ken because of the size and strength of his thighs. It could be called an individual difference.

The last point of emphasis we will mention is rhythm. In order to acquire the desired hurdle rhythm, an athlete needs balance and smoothness. Ken was often referred to as a *smooth-striding hurdler*. In our experience, most good hurdlers fit this description. Their smoothness is the result of rhythm. Rhythm enabled Ken to surge over the last four hurdles. It was necessary to caution him not to force, but increase the rhythm steadily. Too much change will cause the loss of rhythm and inevitably mistakes will result. Good hurdlers seldom make mistakes because they are aware of hurdle rhythm and use it to achieve consistent performances.

THE HOLMES

This Hurdle is "TAKING OVER" the CHAMPIONSHIP MEETS!

- 1958 CANADIAN CHAMPIONSHIPS
- 1956-'58 NATIONAL AAU
- 1957 N.C.A.A. CHAMPIONSHIPS
- TEXAS RELAYS
- TEXAS H. S. CHAMPIONSHIPS
- DRAKE RELAYS
- WASH. EVENING POST MEET
- AND BIG MEETS EVERYWHERE THERE MUST BE A REASON!



a cinch to handle

= F-O-L-D-I-N-G HURDLES
= SELF-LOCKING STARTING BLOCK



—Sliding locking weights "cover" all FOUR heights

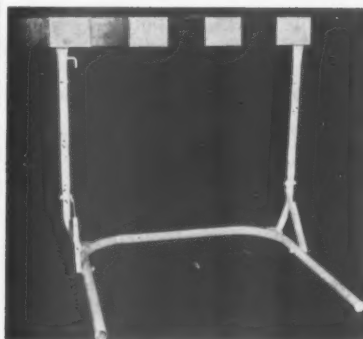
← IN 3 SECONDS! →

Unbelievable SAVINGS of —

- STORAGE — 90%!
- TIME! TROUBLE! REPAIRS!

Made of STEEL — made to take ABUSE!
Folds into parcel 2½" thick — 60 hurdles require no more floor space than do 3 office desks!
No piling up — every hurdle instantly available.

PRICE: 1-10, \$22; 11-up, \$21—f.o.b. Detroit.



Lead weights in bases guarantee proper PULLOVER

And NOW — A NEWCOMER —
a F-O-L-D-I-N-G
HIGH SCHOOL HURDLE

The result of requests from coaches and purchasing agents all over the country. It too, is made of STEEL—and is cadmium-plated. FOLDS IN 3 SECONDS!
It is OFFICIAL — has the rule-demanded 6-8 pound PULLOVER at 39" and 30" heights. Shown on Pacific Coast this past summer — actually had a 100% acceptance!

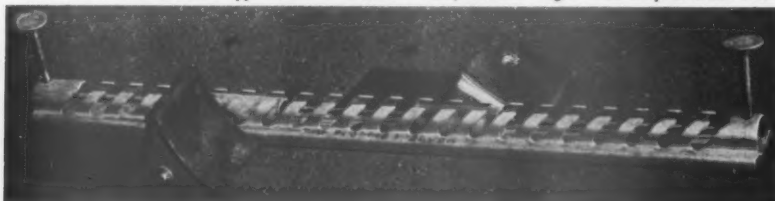
THE PRICE? ONLY \$17 — f.o.b. Detroit

THE NEW HOLMES SELF-LOCKING STARTING BLOCK was surprisingly well received last season — used by many great runners in all sections of the country. Already in use in Europe. Pacific Coast coaches "okayed" it wherever shown this past summer. "Greatest time-saver ever put into a track meet" said a well-known starter.

NOTHING TO LOOSEN, TIGHTEN—NO SPRINGS, "CATCHES"—and—NO HAMMER!

Made to last a lifetime. PRICE: \$15 f.o.b. Detroit.

Each foot has a different type block — FRONT — low, REAR — high — as they SHOULD be!

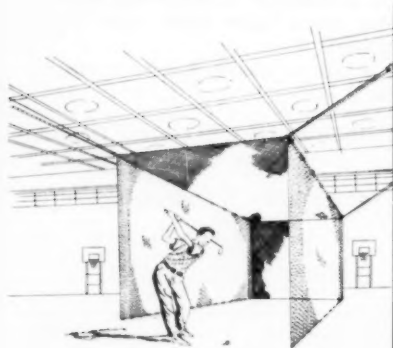


HOLMES FOLDING HURDLE CO., 304 S. Junction, Detroit 9, Mich.

NYLON BATTING CAGE



NYLON GOLF NET



**AQUA-SOL — made
with new nylon fibre**

- Stronger than any other synthetic fibre.
- Not affected by weather or direct sunlight.
- Will not rot or mildew.
- Nylon back. Never has to be replaced like canvas.

**NO EXPENSIVE
FRAME TO BUY**

Net equipped with nylon ropes; your own maintenance staff can erect it quickly by attaching ropes to poles or wire cables of their own making.

For information, write:

**STERLING
NET & TWINE CO.**
164 Belmont Avenue
Belleville 7, New Jersey

"Recognizing that youth have a natural desire for sports competition, the intramural program must lead the way to health and happiness by keeping the spirit of play keenly alive. The intramural program must be dynamic and flexible to satisfy the needs and interests of our youth."

Ronald Dotson
Director of Intramurals
Lima, Ohio, High School

Lima's Intramural Program

By DR. DAVID O. MATTHEWS

Intramural Sports Director, Bowling Green University, Bowling Green, Ohio

LIMA Senior High School is a three-year school consisting of grades ten, eleven, and twelve. Its intramural program is said to have been in continuous operation for 33 years, growing from one which included only three sports to its present list of 20. The greatest development has taken place under the leadership of its present director, Ronald Dotson.

The statement of philosophy which appears at the beginning of the article along with a list of objectives is available to the students through a handbook published by the intramural department.

Organization and Administration

The director is assisted by two committees — the administrative council and the student intramural committee. There is also a student director and team managers according to the need. As is usually the case with this type of organization, the final responsibility for administration and the development of policies and procedures rests upon the director. His responsibilities are identified in the constitution as follows:

1. He shall be directly responsible for the proper conduct of the program and shall determine the policies to be pursued in attaining that end.

2. He shall be responsible for organizing the program, handling all details relative to supplies and purchases of equipment, the upkeep of facilities, and making up schedules and notices.

3. He shall be responsible for the efficient handling of all games in the respective sports. His duties shall include the planning and care of the playing areas, assigning the officials, directing the intramural sports managers, handling of the publicity promotion work, and the tabulation of all permanent records.

The director spends a minimum of 12 hours a week, from September to March, in the performance of duties related to the intramural program. He receives extra compensation for this work. Approximately four hours are spent in planning, six in supervising games, and two in overseeing and training the managers. More time could be used effectively but the responsibilities of coaching and teaching do not permit additional time.

The administrative council consists of the following members: the principal, boys' intramural director, boys' physical education director, class presidents, student intramural director, two student council representatives, and a physical education teacher.

According to the constitution, the specific duties of the council are to handle amendments, settle protests, and make special rulings. It is within the power of the council to overrule the director in situations involving the eligibility of players, settlement of a controversy, and the presentation of awards. In such instances, at least a two-thirds vote of the entire membership is required.

However, in actual practice the administrative council is chiefly an advisory group which has little to do with the details of administration. Its jurisdiction lies in the broad areas of guidance, legislation, and planning. In general, the council merely approves, rejects or amends what the director proposes. Discussion is usually limited, and the principal is the only member who confers with the director when evaluation or revision is needed. The administrative council holds meetings at the beginning of each intramural season and whenever necessary at other times.

The student intramural committee consists of 20 to 25 boys, referred to in the constitution as intramural man-

(Continued on page 46)

IF
IT ISN'T
A
NISSEN
IT
ISN'T A
TRAMPOLINE®



Over 8,000 schools throughout the world include Nissen Trampolines as an important part of their physical education and sports programs. Why? Because only Nissen has the experience that comes from designing and producing Trampolines for more than 20 years. Leading educators have confidence in Nissen quality, safety and performance. Whether purchasing the latest in modern equipment or replacement parts, they *insist* on Nissen Trampolines.

Nissen alone offers *all* these outstanding construction features: OVAL TUBING for rigidity, strength and easy handling; ADJUSTABLE CABLES for individual performance; CONVENIENT HALF-FOLD and COMPLETE FULL-FOLD for easy storage; INTERCHANGEABLE BEDS AND SUSPENSION SYSTEMS to fit all programs and budgets. In addition, Nissen maintains a staff of qualified personnel ready to serve you. The latest in literature, training techniques, lesson plans and motion pictures are available at all times. Please write or call for the newest Nissen catalog and information.

NISSEN TRAMPOLINE COMPANY
200 A Avenue, N. W.
Cedar Rapids, Iowa, U. S. A.

BRANCH OFFICES & FACTORIES:
Romford, Essex, England
Toronto, Ontario
Gümligen, (Berne) Switzerland
Auckland, New Zealand



Nissen Trampoline being used at the Canadian Championships, Canadian National Exhibition, Toronto, Ontario.

Hitters and Place Hitting

By PHILIP L. PHILIP
Millbury, Massachusetts, Public Schools

HITTERS can be classified as follows: the pull hitter, the straightaway hitter, and the slice or late hitter.

In baseball, the pull hitter is always the power or home run hitter on the team. A right-handed hitter's power field would be left field, and for a left-handed hitter it would be just the opposite. This is true in the majority of the cases. Occasionally, an outstanding batter like Bob Elliot, former Boston Braves star, found that his best power was to right center field. However, Bob hit many home runs into his normal power field which was left field.

A pull hitter attempts to hit every pitch before the ball reaches the plate. In this manner, assuming the batter is right-handed, the bat faces the left field area, and that is where the batter wishes to hit the ball. The greatest pull hitters, like Joe DiMaggio, had so much power that they could overcome fast balls on the outside (balls which are normally hit into right field by the straightaway and slice hitters) and pull them into left field. However, the majority of the pull hitters do not have this exceptional strength, so they hit the ball either into center or right field. A pull hitter is so called because he hits the majority of balls into his power field, and not because he hits all of them in that area.

A straightaway hitter is almost always the most consistent hitter on the team. No type of pitch gives him trouble, because he merely hits the pitch where it is pitched. A right-handed straightaway hitter like Rogers Hornsby would pull all inside pitches, merely by hitting the ball before it reached the plate. Any ball that is hit in front of the plate, and in which the batter does break his wrists,

will almost always go into the pull field. Remember that the level of the bat is facing left field.

Hornsby would low bridge any pitcher who pitched him down the pipe, i.e., if he were only looking for a base hit. Oftentimes, if the pitch were really set up, he would pull it for a long drive. All of his hits would depend upon the situation in the game.

If the pitcher were to throw the Rajah an outside pitch, he would merely let it pass his normal hitting zone (in front of the plate) until it reached a point opposite the center of his body, and then he would blast it into right field.

The strongest point and greatest asset that a straightaway hitter has is that he forces the fielders to guard the entire playing surface, thus enhancing his chances for a base hit. The more ground a fielder has to cover, the more chance the batter has of blooping in a base hit.

Our third type of hitter is the slice or late hitter. This chap is one who stands far enough away from the plate so that he is able to hit even an inside pitch to the opposite field. Let us assume that we have a right-handed batter. He would stand far away from the plate and step into each pitch, hitting everything into the opposite field, in this case, to right field. He is able to do this by permitting the pitch to pass home plate slightly. Then the batter lashes into the pitch and slaps it into right field. Because he does not hit the ball until it is almost into the catcher's mitt, this batter is called a late hitter.

All teams have a need and specific use for a late hitter. He is usually the hit and run man and, as a rule, bats second in the line-up. Here is a common situation in which he is a decided asset: a fast runner is on first

base, with nobody out. The runner breaks for second base on the pitch. The second baseman runs over to second to prevent the steal. Meanwhile the batter, who has the hit and run sign, slices the ball to right field. The ball is grounded through the position just vacated by the second baseman, and it goes through to right field. The runner on first base, who has broken with the pitch, races all the way to third base, and if the long throw from right field to third is not cut off properly, the batter goes all the way to second base, placing two men in scoring position, just by means of a hit and run play. This is one of the most exciting plays in the game, and it takes an adept late batter, a hit and run man, to execute it perfectly.

We have discussed the categories into which batters are generally classified. It must be kept in mind, however, that a batter cannot be classified exclusively as one particular type. Even a pull hitter occasionally rams a line drive to the opposite field. Straightaway hitters sometimes pull for distance, and late hitters sometimes cross up the defense by pulling a ball. A batter is classified by what he does the greater part of the time.

Place Hitting

Almost every batter who ever achieved a fair measure of success (.290 hitters and above that mark) was able to place hit with some facility. Place hitting means that a batter is able to hit the ball to the field that he wishes, or in the direction of a particular spot. When we speak of a place hitter, we usually mean that the batter is able to hit to the opposite field, i.e., a right-handed batter would hit to right field, and a left-handed batter would hit to left field.

There are three methods used in place hitting which are very common to experienced batters:

The first method, and the one most widely used, is the one in which the batter moves his rear foot away from the plate, thus pointing his shoulders toward the opposite field. Let us assume that the batter is right-handed. The exact opposite would be true for a left-handed batter. He is in excellent position merely to meet the ball and send it into right field.

A second method which is used with great efficiency is for the batter not to complete the break in his wrists. It should be kept in mind that each time a batter swings properly, he must break his wrists in order to get a smooth, effortless, speedy, and powerful swing. However, when the batter is trying to hit to the opposite

field, he does not want to break or roll his wrists (back wrist over the front one). This breaking of the wrists gives the batter a tendency to pull the ball, which is not his purpose when he is place hitting. Instead of breaking his wrists, the batter merely throws the bat out and pushes the ball into right field.

The third method of place hitting is the most difficult to perform, but it provides the most power. In this method the batter changes his hitting zone from in front of the plate to a spot which is directly opposite the center of the batter's body. This merely means that the batter must wait until the ball is even with his body before he makes contact with the ball. He is actually holding back on his swing just a fraction of a second, before he hits the ball. When the bat makes contact with the ball, it is not yet perpendicular to the batter's body, and the bat level is facing right field. Thus the ball shoots off the bat and goes in a line which is directed by the angle of the bat.

A straightaway hitter is a natural place hitter. He hits inside pitches to left field (assuming the batter is right-handed), pitches down the gut, or middle of the plate, to center field, and outside pitches to right field. This is the manner in which the straightaway hitter performs these operations. On an inside pitch, the batter hits the ball before it reaches the plate. Let us study the position of the bat in this case. The level of the bat is facing left field when the ball is making contact with the bat. The ball must go in the direction to which it is aimed.

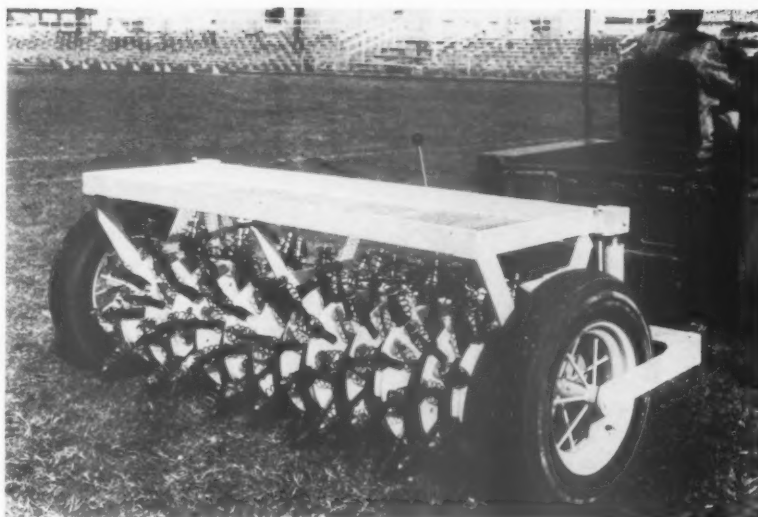
In like manner, a pitch thrown down the pipe is hit just as it reaches the plate. The bat is perpendicular to the batter and the level of it is facing toward center field. The ball must almost always go into center field.

A pitch, which is thrown on the outside of the plate, is hit when it is almost behind the plate. The level of the bat will point to right field, to which the ball goes.

Place hitting for a straightaway hitter is an easy matter. For the pull hitter, placing hits is a little more difficult. It is necessary for the batter to adjust his timing or his stance, so that he can hit to the opposite field.

Joe DiMaggio was a great right-handed pull hitter in his days with the New York Yankees. Wherever he batted, the infield and the outfield would shift heavily to the left. Joe's philosophy of hitting was known. He was being paid \$100,000 per year to

(Continued on page 58)



Your Team Deserves This Treatment

You wouldn't send your team out to play without helmets, without shoulder cushions, without pads. That would be inviting injury, the last thing you want to happen to the boys in your care.

Yet, you do invite injury if you send your team out to play on a field that is hard and compacted . . . that does not have a full cover of resilient turf.

How can you avoid this risk? By insisting that your field be aerified regularly. Then you'll have the kind of healthy, deep-rooted, resilient turf that provides firm footing yet cushions falls to prevent injury. Porous, ventilated soil is fundamental to good turf growth. With a West Point Aerifier* there is a maximum of cultivation with a minimum of surface disturbance. No interruption of practice or play.

Talk aerification. Demand aerification. Write for copies of our booklet "Improving Athletic Field Turfgrass" and distribute them to your principal, the grounds superintendent, members of your school board. Do whatever it takes to keep your field in the condition your team deserves.

To help you, the West Point Products distributor in your area will be glad to arrange an Aerified demonstration for you and whomever you want to invite. If you need to know his name, write to West Point Products Corporation, Box 99, West Point, Penna.

Good luck in your campaign for a safer field for your boys!

*Reg. U.S. Pat. Off.



Aerification Is Basic to Turfgrass Maintenance

HAVING baseball players responsible for coaching bases is mandatory according to high school rules. Most states forbid the coach or his assistant to act as a base coach and specify that this job be handled by a member of the team. Therefore, it is important that the base coach be trained for his job just as the players who are practicing for a game.

baseball. Players prefer an organized plan rather than a hit and miss affair.

The base coach must know the ability of each player on his team. Because most high schools do not play each other often enough to study the weaknesses of the opposition, we will not discuss that phase of base coaching. A base coach should know who the faster men on the team are; which

infield.

4. He should be reminded constantly of the count on the batter.

5. The base coach should remind the runner to check for the signal.

6. The runner should be told whether or not the pitcher has a good motion to first base or whether he rarely throws there.

After these instructions, the base

Train Your Base Coaches

By **NORMAN F. LEHMAN**

Baseball Coach, Soap Lake, Washington, High School

Very often base coaching is a neglected phase of high school baseball. Many coaches do not make sure there are base coaches until a player is on base or a critical situation exists. The importance of base coaching must be stressed to the players or the job will be neglected.

By explaining that it is necessary for the batter and the runners to know the signals and stressing the fact that the base-runner will need assistance, the coach can encourage a boy to be a good base coach. The players must be shown how important base coaching is to team victory. Another method which is used to encourage base coaches is that of allowing them credit toward the winning of their school letter for the innings spent coaching. This will help to make the players realize that base coaching is as important to the team as a regular team position.

In selecting base coaches, the following qualifications should be kept in mind:

The base coach must be alert because he has to be looking continually for the break to advance a man to the next base. He must keep the runner alert at all times; therefore, he must be alert. Lazy base coaching leads to lazy running.

Good knowledge of the game and its rules are necessary on the part of the base coach. He should know when to play it safe or when to call for the extra base on a close play. Knowledge of the infield fly, the balk, and force play situations is needed to prevent mistakes. Included should be the coach's philosophy on baseball. A base coach cannot be criticized for mistakes unless he knows what the coach wants. The coach should make his ideas known to the whole team in order to instill confidence in his system of

ones can get the jump on a pitcher; what ability the players have for sliding; and whether or not they are aggressive enough to come in hard on close plays.

Aggressiveness is another requirement for a base coach. He must instill confidence in the runner, have a good voice, and use it continually.

If it is at all possible, the person coaching the bases should be one of the regular players, either a substitute fielder or an extra pitcher. These individuals have been in contact with actual play situations and can be of more assistance to an inexperienced base-runner.

When coaching first base, the base coach should be in the forward part of the coaching box. Thus he is in closer contact with the batter and is able to offer the runner encouragement in reaching first base.

When the ball is hit, the base coach has one of three choices in directing the runner. He should signal the runner either to run hard through the base, take his turn for second or take an extra base. On an infield hit, the base coach should be continually urging the runner toward first. Often the base coach can help the runner by using his arms in signaling him to take his turn for second.

When a runner is on first base, the following instructions should be relayed to him:

1. He should be told who has the ball, thus preventing any hidden plays.

2. He should know how many outs there are and whether to play it safe or take a chance.

3. He should know what to do on any type ball that is hit. As an example, he should run hard on a ground ball, part way on a fly ball, and hustle back on line drives to the

coach should give constant voice reminders to the runner to keep him alert.

When there is a runner on second, the first base coach is also responsible for his safety. He must be doubly alert in watching both the shortstop and the first baseman so neither will be able to trap a runner off base. The first base coach can see how far the shortstop is from the bag better than the third base coach. The runner should also check the second baseman.

Since the third base coach is closest to home, he is vital in the scoring of a run on a close play. With a runner coming into third base, the base coach's job is threefold. He may wave his arm in a circular motion toward home plate, indicating that the runner should take his turn. He should hold his arms straight up with the palms out to indicate that the runner should hold at third. This signal can be given satisfactorily after the runner has been signaled to make his turn. If the runner should slide into the base, the base coach's arms should be extended with the palms down. His arms should be extended to the side of the bag away from the throw so the runner will be able to avoid the tag on the slide.

The third base coach should be well down the line toward home so that he has a clear field of vision and if necessary may hold up the runner after he takes the turn.

Initial instructions given the runner are primarily the same as those given at first base. Special emphasis should be placed on what to do when the ball is hit. The runner should be told when to attempt to score, hold up at third or draw a throw from a fielder.

A few rules of thumb to aid the third base coach in guiding the runners are as follows:

1. If the ball reaches the relay man about the time the runner is rounding third, he should be able to score.

2. Unless they are playing to cut off the run, a runner should score on a ball hit to the second baseman or the shortstop.

3. A runner should score on an outfield fly if the outfielder has to make a running catch (except when he is coming in towards the infield), if the ball is hit to normal depth of the outfielder or if the outfielder has a noticeably poor throwing arm.

4. A runner should attempt to draw the throw on short fly balls to the outfield.

5. The runner should be alert to the possibility of scoring on the catch of a foul ball if the fielder is in poor throwing position.

6. He should always be alert to the chance of scoring on a lapse of some opposing team member.

The last situation where the use of a base coach is an aid is the case of a runner coming in to score. The next

NORMAN LEHMAN graduated from Gonzaga University. He played on and coached semi-professional teams for several years before starting to coach in high schools. His teams posted an overall .773 winning percentage. Last year the Soap Lake team lost only one game.

batter is in good position to offer assistance. He can give signals similar to those given by the third base coach regarding the direction of the slide in order to avoid the tag and also offer vocal encouragement.

A few general observations which may lead to better base coaching are as follows:

1. Develop an awareness of the base coaches and the assistance they give the team members.

2. Have the base coach learn to use his hands as a megaphone when calling to the runners.

3. Impress on the players that intonations of a base coach's voice can express urgency to the runner.

4. The base coach should go through the different hidden signals such as touching his hat, brushing his trousers, etc., when no one is on. These actions will make his signals more difficult to steal.

5. The base coach should step over and talk to each runner in case verbal signals have to be given later on.



PROJECT YOUR VOICE

...like a Harpoon!

NOW you can deliver *spoken* instructions instantly — the full length of a football field or across a mile track — without yelling your lungs out! New "TP" transistor-powered) AUDIO HAILER amplifies speech 2000 times, puts everyone within a radius of a half to three-quarters of a mile, in range of your voice! "TP" HAILER uses four latest-type power transistors, yet runs on standard flash-light cells, and far out-performs any "one-piece" portable voice-system on earth. For full details, or field demonstration, mail coupon below. Audio Equipment Co., Inc., Port Washington, N. Y.

AUDIO
HAILER[®]
transistor-powered
PORTABLE MEGAPHONE

AUDIO EQUIPMENT CO., Inc., Port Washington, N. Y.

- ☐ Send brochure and price list on Audio Hailer.
☐ Have your local dealer make demonstration.

NAME _____

TITLE _____

SCHOOL OR COLLEGE _____

ADDRESS _____
CITY OR TOWN _____ ZONE _____ STATE _____
(IF ANY)

New Trends in Teaching Will Help Coaching

By CHARLES REAM

Backfield Coach, Dickinson College, Carlisle, Pennsylvania

WHEN a few boys at Princeton picked up a ball and began kicking it around, thus initiating college football, we doubt if anyone suspected that the game would grow into its present magnitude. Football has become a highly specialized and an increasingly scientific game. Many hours of practice are spent each day on conditioning and strategy so that the game can be won on Saturday afternoon.

To the average spectator football is little more than sitting in the crisp air on a beautiful fall afternoon watching 22 players try to carry the ball over their opponents goal line, but coaches know that football games are seldom won Saturday if they have not been won at practice during the week. These practices must be well-organized sessions in order to cover all of the material necessary to field a respectable team.

Coaches have many different theories concerning the content of a practice session. These differences of opinion make football the exciting game it is; however, all coaches agree that a practice must be well organized.

Coaches who are constantly seeking more practice time seldom stop to analyze their teaching to see if it is educationally sound. Educators have spent sums of money and centuries developing and testing methods of teaching, but many coaches fail to consider these results or relate them to their own situations. Physical education instructors have also done a great deal of research to help coaches evaluate and correct their programs. Let us take time out to look at some newer theories in physical education.

At the present time many coaches are still using a method of teaching that has been used for years. This technique is commonly known as the progression method or teaching from the specific to the general. While this theory sounds good and many football players have been taught in this manner, we found that even though an individual has mastered a series of various skills it does not follow that

he is a proficient competitor.

A good example of this theory is swimming. We have seen individuals perform the various swimming skills such as the stroke, the kick, etc., to perfection, but when these skills are combined to produce swimming, the results are seldom anything resembling the sport.

Although it is possible to teach from the specific to the general, it is our theory that a reverse of this method gives faster results on the football field. It has always seemed to us that coaches take a negative approach to the quality of a team's skills. Instead of assuming a boy knows nothing and teach basic fundamentals, let us assume he knows a few skills and put him in a game situation working in reverse. Place 11 football players on offense, and 11 more on defense, and enter into a game situation. We will concede basic skills such as blocking and tackling must be taught first until a small degree of efficiency has been reached. However, we do maintain that too much time is lost teaching basic drills to a team where one-half of the boys are already proficient in the skill. In the game situation, if one boy makes a mistake, replace him immediately and have one of the assistants take him aside and correct his error rather than stop the practice of 22 boys to correct one player.

As mentioned previously, some time must be spent on teaching the basic skills of the game which brings us to another theory physical educators have been testing and discuss-

ing for quite some time. This theory is based on the statement that an individual is too unique and specific to deal in generalities with none or very few associated particulars. What is meant here is that in coaching football we should coach for excellent performance rather than excellence in the use of blocking dummies, driving sleds, running tires, etc. Although these skills have some merit, if more practice is needed, many of these apparatus drills are a waste of time. Many coaches, no doubt, have seen players develop perfection in various skills executed on apparatus only to see the same player in a game situation look as though he never had a bit of training.

It is our belief that the game situation must be present before true football learning can be mastered. We are not inferring that drill apparatus and equipment are useless; they can be used for conditioning purposes and do save wear and tear on the team. However, there is no substitute for real scrimmage. Many football coaches are coming around to this theory. Small air dummies are replacing the large rag-filled type; blocking aprons are also being used more than ever before. In fact, from necessity rather than research, coaches have found half-time scrimmages to be more effective than individual one-on-one drills. This type of practice teaches position, angle of blocking, opponents' maneuvers, and desire that could never be taught with the same degree of time efficiency. We believe, that by creating a game situation and improving upon errors individually rather than penalizing boys who have already mastered the skill by making them drill their mastered skill over and over, we can save time on the practice field and at the same time field a better coached team.

In the future, we believe that athletic coaches will by accident or incident use research findings of educators in much the same way the medical doctor uses the results of medical research.

CHARLES REAM graduated from the University of Pittsburgh. He coached at the Western Pennsylvania School for Blind Children, Canonsburg High School, and Wilkinsburg High School before accepting his present position as backfield, wrestling, and lacrosse coach at Dickinson College.

Every Coach Knows:

If it's **CONVERSE** —it's **QUALITY**

(In fit, comfort and durability)

It is not by chance that so many winning teams wear Converse athletic footwear. For over 50 years, Converse has concentrated on quality . . . building footwear that has won a national reputation . . . and top standing with both coaches and athletes. To give your squad a competitive edge, specify the best . . . specify CONVERSE!

For Basketball

America's No. 1 basketball shoes specified by more coaches, worn by more players than any shoes made exclusively for basketball. Choice of 2 great models: Regular All-Star or All-Star Oxford. Men's & women's sizes.

CONVERSE
Chuck Taylor
ALL STARS



CONVERSE RUBBER COMPANY
MALDEN 49, MASSACHUSETTS

For Track

Built for speed, minimum weight . . . snug, non-chafing fit. Red or black duck uppers with white tape supporting stays. Non-slip crepe rubber sole. Men's and boys' sizes. For outdoor or indoor track sports.

CONVERSE
TRACK STAR



For Tennis

Famous as the finest for tennis: COURT STAR (lace-to-toe) and NET KING (circular vamp) with Pinpoint Design Molded Sole. SLIPNOT (lace-to-toe and circular vamp) with Non-Skid Molded Sole. Men's and women's sizes.

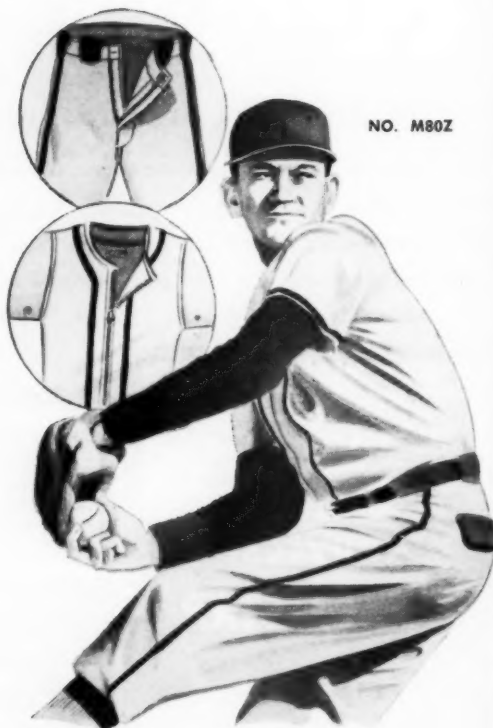
CONVERSE
• **COURT STAR**
• **NET KING**
• **SLIPNOT**



NEW WASH 'N' WEAR UNIFORMS FOR ALL COLLEGE & HIGH SCHOOL BASEBALL TEAMS . . .

A
Lightweight
Sturdy Fabric

Send for
FREE
Sample
Swatch



Here's the first all-new washable major league uniform . . . a Dodge Davis fabric . . . that can reduce laundering costs. Truly, a lightweight beauty . . . 5 oz. flannel used in manufacture. It's a blend of 35% Virgin Wool and 65% Orlon.

POST
Manufacturing Co. Inc.

148 Lafayette Street

**ASK YOUR DEALER ABOUT THE
ALL NEW WASHABLE UNIFORM
BY POST**

or write for the new Spring 1959 Catalog

New York 13, New York

Post Major League Style

- Zipper Shirts & Pants
- Lined Knee & Seat
- Ventilated Crotch & Armpits
- Full Tunnel Belt Loops — Choice of Solid or contrasting color
- Snuggox Waist Band
- Full Cut Shirt with Wing Armpit
- Shirt made in set-in or Raglan Style

Intramural Program

(Continued from page 38)

agers. They are given responsibilities in administration, publicity, statistics, and properties. All of the intramural managers are selected from the membership of the Key Club, which is an affiliate of the Kiwanis Club. A candidate must have a scholastic average of at least B—, and is carefully judged as to his organizational ability, dependability, and willingness to participate in extra-curricular activities.

The intramural managers act as scorers, timers, doorkeepers, and referees for the various sports. The jobs are usually rotated among the members of the committee throughout the year. The student scorers are not required to have previous experience, and their training is provided by a special program which is set up for them by the director. Sports which require their participation include bowling, volleyball, riflery, softball, and touch football. The timers' duties are simple and well defined. Before a game they receive a clock, horn, team shirts, and game equipment. The shirts are distributed to team members, and the play equipment is given to the referees.

Most of the officiating at intramural games in Lima Senior High School is done by members of the student intramural committee. Although the job is a demanding one, there is never any shortage of volunteers, because of the system of training and selecting officials. In the fall, all committee members who are interested in becoming referees attend an organizational meeting at which nine sports in which they are needed are discussed. The rules of the current sports are reviewed along with the specific rules required of officials. If a boy is still interested, he is asked to attend clinics for a detailed explanation and demonstration of the rules. Finally, the volunteers attend tryout sessions at the close of which the final decision regarding appointment is made.

In addition to officiating, the referees are called upon to attend to equipment and to work with the timers and scorers. It is the student official's job to see that the game equipment is ready 15 minutes before play is scheduled to begin. He receives the equipment either from the timer, or in games in which time periods are not used, directly from the equipment manager. He must also appear properly dressed, and is personally re-

(Continued on page 54)

Playing Catch

(Continued from page 16)

The object of speed catch is to get rid of the ball as soon as possible after it is caught. This drill is fun and is a great conditioner. The players fire the ball back and forth with increasing speed, and must be constantly mindful of accuracy. Speed catch will teach balance, and develop the ability to throw from many positions. It will help boys who have trouble getting rid of the ball quickly in a game situation. Players stand 50 to 60 feet apart (Diagram 5).

Three-cornered catch will teach the fundamental of receiving a throw, turning, and throwing to a third person. In this particular version, two boys stand side by side, playing catch with a third boy. After each throw, one of the two will move right or left a few steps along the arc of a circle described around the third player. This forces the third, or center player to turn his body a little more for each succeeding return throw. The drill continues until the three boys are in a straight line, after which positions are rotated. Throwing distance is 90 to 100 feet (Diagram 6).

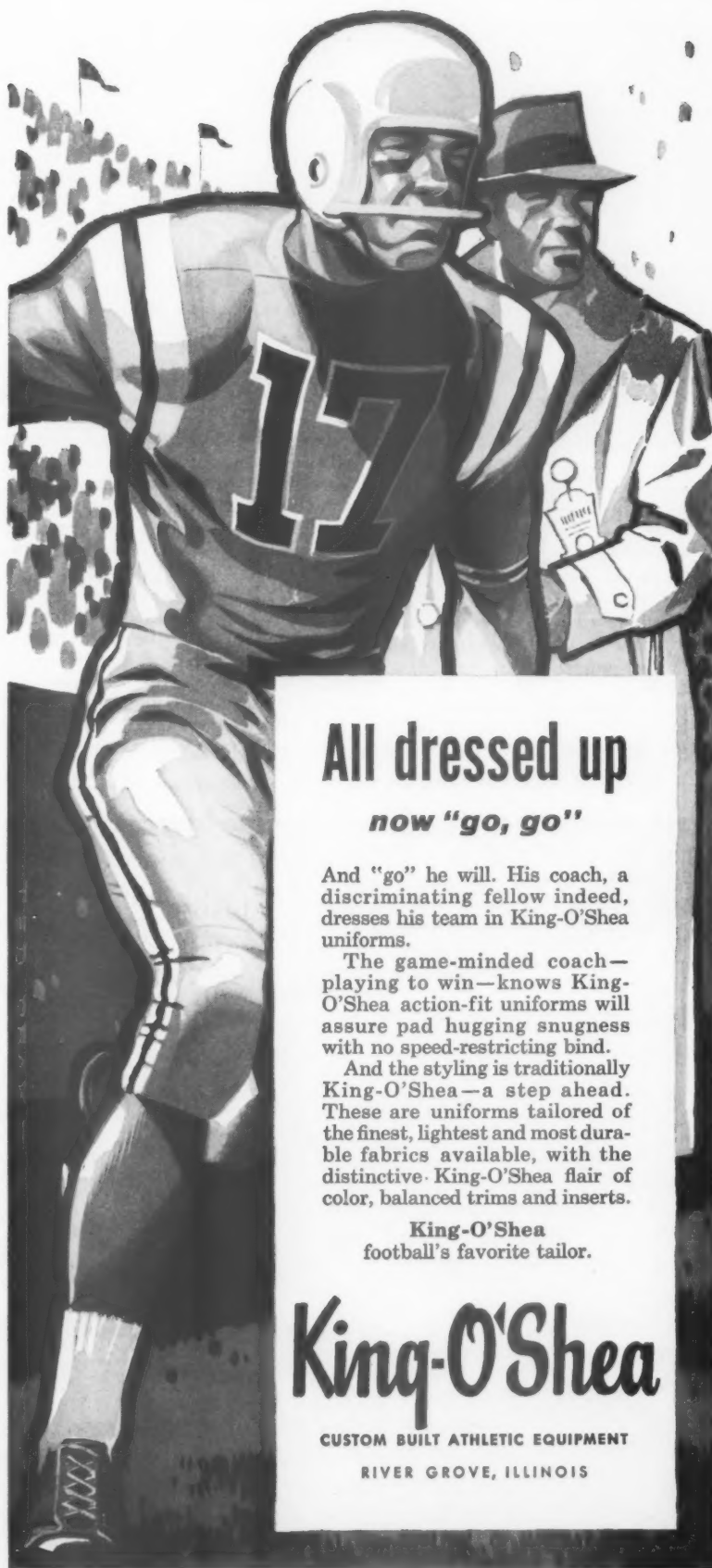
Base Paths

(Continued from page 20)

We realize that the ideal time to call this play is when the pitcher is behind the hitter and there is a reasonable chance that he will come in with the next one. However, it has been our experience that this orthodox situation often does not prevail when the play is in order. This past season we have had some success in calling the play on the first pitch. Many young pitchers who are concerned about their control will often try to get a fat part of the plate with the first pitch. Many of them are coached accordingly. We also realize that probably more pitch-outs are called on the first pitch than at any other time. We will gamble on this since we believe the odds are still with the offense.

Suicide Squeeze

Here is another play which we thought was only for the professionals until one of our opponents showed us otherwise a couple of years ago. Three times he called for the play and three times he scored a run. The first time our pitcher hurried his pitch and threw the ball into the dirt, and there was no play; the second time the catcher dropped the ball in his anxiety to make the tag; and on the



All dressed up now "go, go"

And "go" he will. His coach, a discriminating fellow indeed, dresses his team in King-O'Shea uniforms.

The game-minded coach—playing to win—knows King-O'Shea action-fit uniforms will assure pad hugging snugness with no speed-restricting bind.

And the styling is traditionally King-O'Shea—a step ahead. These are uniforms tailored of the finest, lightest and most durable fabrics available, with the distinctive King-O'Shea flair of color, balanced trims and inserts.

King-O'Shea
football's favorite tailor.

King-O'Shea

CUSTOM BUILT ATHLETIC EQUIPMENT
RIVER GROVE, ILLINOIS

third attempt the opponents managed to bunt the ball for the first time and a run scored. By the time the game was over, which we lost 5-3, our catcher and pitcher were both in temporary states of psychoneurosis and the remainder of the team was in a state of deep depression. The very next day we started to work on this play and have used it ever since.

We know that some coaches will say that the play is too dangerous since young ball players often do not bunt well. Just as in the hit and run play, the batter may not touch the ball and still the team can succeed. Here again there is some possibility of misplay on the part of the defense. We know of no play in baseball which is more damaging to the morale of the defense than a theft of home. A misfired suicide squeeze might result in the runner on third stealing home. We have seen it happen too many times to dispute it. Pitchers may fail to look toward third before the pitch to keep the base-runner honest, they may throw wild in hurrying their throw to the plate or the catcher may handle his tag poorly.

Bunt and Run

A few times each season we advance

runners all the way to third from first on this play. The batter attempts to bunt down third in order to pull in the third baseman to handle the ball. Our base-runner on first is coached to put his head down and take off with the pitch just as in a steal. If he hears the ball bunted, he looks up just as he approaches second to see where the ball has been placed and whether he has a chance to keep on for third. He, not the third base coach, makes the decision. If he hears no bunt, he is prepared to slide into second. If the third baseman handles the ball and does not get back to his bag quickly, we feel we have it made. In fact, we can make it even when the third baseman is alert if we know the first baseman cannot throw well. Of course, this throw is comparable to the catcher's throw to second and is a tough one for many first basemen.

This play can also score a man from second if it is well executed. Again the batter tries to bunt down third since the third baseman cannot play the ball and watch the base-runner who is behind him. If the third baseman handles the ball and throws to first, we feel we have a run. This play backfired on us once when the opposing third baseman started his throw to first, held back, and threw home.

Since great opportunities to steal bases in a game have been pointed out, it might seem that we would see no need for this play. Why use an out to get a man from first to third if he can steal these two bases? Obviously the steal is not that easy, particularly of third. Against a weak catcher we might have no need for the bunt and run, but when the risk is too great we might employ this play. If it succeeds, we have a man on third with one out, and it is possible for him to score in a number of ways.

The Sacrifice Bunt

From the foregoing it might be felt that there is no place for the sacrifice in our scheme of things. Such is not the case. In a close ball game against a tough pitcher and good throwing catcher, we would not hesitate to use this play. Our feeling is that the sacrifice bunt is often used needlessly in high school and college games to advance a runner.


Double Steal

Actually we have three different types of double steals for situations in which there are runners on first and third. The key to all of these is

NOW!

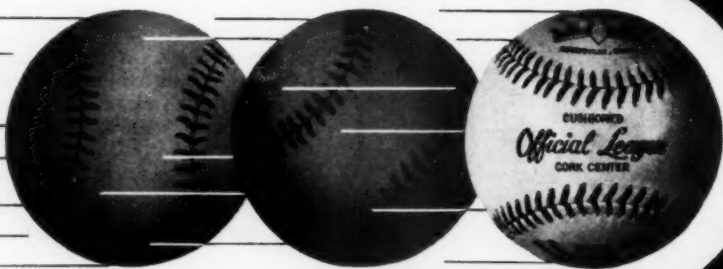
A SURE HIT FOR INCREASED
BASEBALL AND SOFTBALL SALES

TRIPLE CROWN



ROCKVILLE CONN.

SINCE 1912



TRIPLE CROWN

BASEBALLS and SOFTBALLS

Representatives already appointed to serve you —

Mid-West and Southern: E. C. "MULE" FRAZIER & ASSOCIATES, P.O. Box 116, Waco, Texas

West Coast: DONALD R. ASHTON & CO., 1517 N. Gardner St., Los Angeles, California

Write to: Dept. T. C. for
Catalogue and Price List

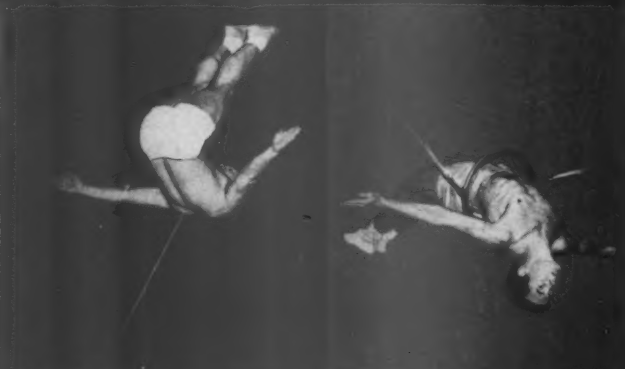
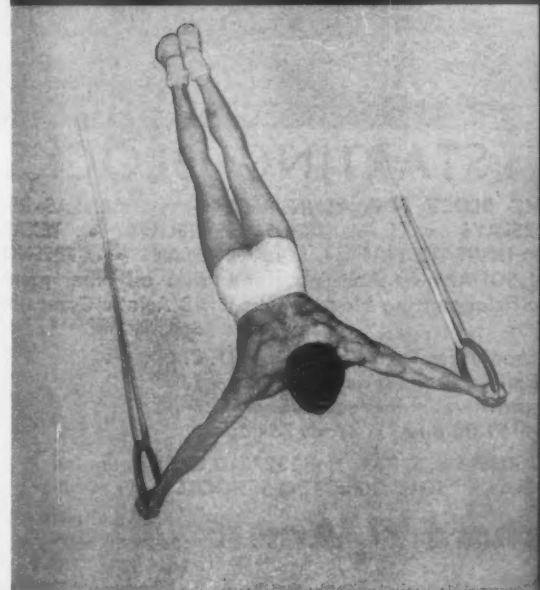
TOBER BASEBALL MFG. CO., INC. P.O. Box 210, Rockville, Conn.



engineered
Quality
 all the way through

Preferred above all others the world over
 for design perfection, fine materials, superb
 craftsmanship, unsurpassed durability. No better
 gymnasium apparatus is made.

MEDART
 GYMNASIUM APPARATUS



On every gym equipment problem consult
 the world's most experienced authority.
 Write for catalog

SPECIFY the best, then **INSIST** on it!

FRED MEDART PRODUCTS, INC.
 3540 DE KALE ST. • ST. LOUIS 18, MO.



when the man on first starts his steal. It may be before the pitch, with the pitch or after the pitch. We have had the most success with the first type and manage to get ourselves several runs a season on this play alone.

Our objective on the play is to score a man from third and we are willing to spend an out to do it. If the defense will make no play on the man taking second, we are thwarted, but have placed another man in a scoring position. Our players have the greatest chance of coaxing the defense into a play if the man on first starts toward second as the pitcher goes into his stretch. Without going into the details, there is a reasonable chance of getting the run if the pitcher throws through to second to head off the play.

Sometimes we send the man on first through as a straight steal. If the catcher throws down without first looking toward third, we believe our team can score. Occasionally we try to surprise the catcher by starting our man to second just as the catcher is about to throw the ball back to the pitcher. If the catcher throws to second, or to the pitcher who in turn throws to second, we feel we have a good chance of scoring.

We have shown a number of ways in which the offense can show daring

on the base paths and gain some measure of advantage in high school and college baseball. Obviously daring cannot always be substituted for base hits. In a game last season we managed to go ahead in the early innings 3-0 against a team far superior to ours by using some of the tactics which have been discussed. However, when the smoke cleared we lost 12-3 because our cute stuff was no match for their booming bats. Then, too, many of these plays are not in order when a team is several runs behind. We point out to our boys that a good part of our offense is given up if we let the other team get off to a lead of several runs. When this happens, all the daring and courage in the world will not substitute for a few good solid base hits.

Discus Analyzed

(Continued from page 14)

constantly experimenting with 2 and even $2\frac{1}{4}$ turns, but to date without marked success.

Using $1\frac{3}{4}$ turns with a hop, the two University of Minnesota athletes, Bob Fitch and Fortune Gordien, devised their own method of increasing the speed with which they whirled across the circle. This new style was

based on a simple principle of physics, and their application of it enabled each to establish a world discus throwing record. Fitch and Gordien actually fell off balance to gain initial momentum, and then caught up with the falling body as they reached the power position. By using far more off-body balance than ever before attempted, these two men were able to increase again the centrifugal force that could be applied on the discus. Today we see two distinct styles in use throughout the world — the orthodox turn and the Minnesota turn.

Hold

In teaching and understanding either of the prevailing styles of discus throwing, the athlete must learn first how to hold the discus in his hand so it may be effectively released clockwise off the index finger. The discus must be comfortable in the hand, the fingers should be spread slightly, and the finger tips with the exception of the thumb should be over the edge. It is released from the index finger in a clockwise rotation, with the palm of the hand facing down. The thumb lies at about 45° to 50° to the index finger and the very tip is just up to the edge of the

*Here is the block
with which records
are made*

Event	Time	Place	Date
100-Yd. Dash	9.3	Fresno, Calif.	5/15/48
100-Yd. Dash	9.3	Evanston, Ill.	5/14/55
100-Yd. Dash	9.3	Fresno, Calif.	5/12/56
100-Yd. Dash	9.3	Durham, N. C.	5/ 5/56
100-Yd. Dash	9.3	Texas Relays	4/ 6/57
100-Yd. Dash	9.4	Abilene, Tex.	4/27/57
220-Yd. Dash	20.0	Sanger, Calif.	6/ 9/56
220-Yd. Dash	20.2	Los Angeles	5/ 7/49
440-Yd. Run	46.2	Salt Lake City	6/21/47
440-Yd. Run	46.9	Berkeley, Calif.	6/ 3/48
440-Yd. Run	45.8	Modesto, Calif.	5/26/56
120-Yd. H. H.	13.5	Fresno, Calif.	5/15/50
220-Yd. L. H.	22.2	Durham, N. C.	5/ 5/56
220-Yd. L. H.	22.3	Salt Lake City	6/21/47
400-Meter H.	49.5	Los Angeles	6/29/56
110-Meter H.	13.4	Bakersfield, Calif.	6/22/56
880-Yd. Run	1:46.8	L. A. Relays	5/24/57
2-M Relay	7:22.7	L. A. Relays	5/24/57
880-Relay	1:22.7	Texas Relays	4/ 4/57
440-Relay	39.9	Kansas Relays	4/20/57
440-Relay	39.9	W. C. Relays	5/11/57

And Seven Olympic Records set at

Melbourne, Australia



ARNETT STARTING BLOCKS

THE OFFICIAL STARTING BLOCK FOR: PENN RELAYS • KANSAS RELAYS • MODESTO RELAYS • L. A. COLISEUM RELAYS • TEXAS RELAYS • COMPTON INVITATIONAL • DRAKE RELAYS • FRESNO RELAYS • MADISON SQUARE GARDEN • and most all other great meets in the U. S. The official starting block for the 1958 Asiatic Games in Tokyo.

Wholesale School Price Each Complete F. O. B.
Inglewood, Calif. plus tax if any, \$20.00.
Replaceable parts when needed. Rubber
Foot Facings @ \$1.00 and "T" Nails 75¢ each.

"LOOK FOR R. W. ARNETT U. S. PAT. No. 2323510 CAST in the top
of every ARNETT BLOCK" SOLD DIRECT TO SCHOOLS — Write to:

TRULY THE CHOICE OF CHAMPIONS **Richard W. Arnett**

P. O. Box No. 527
Inglewood, California

discus. During the swing, turn, and release the thumb and the spread little finger give the thrower stability and control of the implement. The actual finger placement and spread vary considerably and only experimentation can determine an individual's most effective grip. In any event, the athlete should not wrap his fingers too far over the edge. The vast majority of throwers have found that a uniform spread of all fingers is more comfortable and effective.

The grip on the discus should be firm, but not tense, because during the turn centrifugal force will hold the discus in the hand so a vise-like grip with the fingers is not necessary. In addition, an easy grip on the discus will enable the thrower's wrist to drop back or cock during the turn so that the final flip into the discus can be accomplished on release.

Discus Swing

Important phases in discus throwing are the rhythm and tempo of preliminary swinging of the discus, prior to the start of the turn. The angle of the swing also plays a vital part in the angle at which the arm will be carried throughout the turn and in the angle of discus flight itself. Of more importance is the tremendous effect that the rhythm and smoothness of the preliminary swing has on the relaxation, speed, and coordination of the turn and throw. An athlete who swings the discus in a careless manner simply cannot start the turn suddenly with a more determined rhythm or at a sudden increased speed without destroying smoothness and relaxation. The preliminary discus swing should be close to the plane in which it is to be delivered, and at a rhythm and rate consistent with the athlete's actual turning speed.

Discus Flight

The optimum angle at which the discus should be thrown is very close to 35° ; however, most experienced throwers vary the angle of their throw under different wind conditions. In general, a head wind requires a low-throw, flat discus because in this situation a discus can climb just as an airplane wing does when it is moving into a wind. On a still day, or with a slight tail wind, the thrower usually attempts to lift the discus at an angle greater than 30° because gravity becomes a more important factor when head wind is not present.

In 1931, Daniel Guggenheim of the School of Aeronautics at New York University, made an exhaustive study

You get total participation in your PHYSICAL EDUCATION PROGRAM with a Free Harvard Kit for Gold Medal HARVARD TABLE TENNIS TOURNAMENTS

1...mail completed coupon today.

HARVARD TABLE TENNIS CO. 60 STATE ST. BOSTON 9, MASS.

Gentlemen: 5

In order to run a table tennis tournament please send FREE Harvard Tournament Kit.

SCHOOL OR ORG. _____

NAME _____

POSITION _____

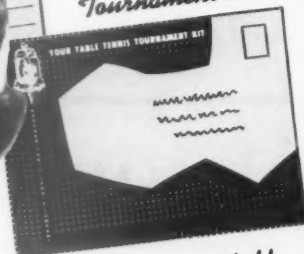
ST. & NO. _____

CITY _____

ZONE _____

STATE _____

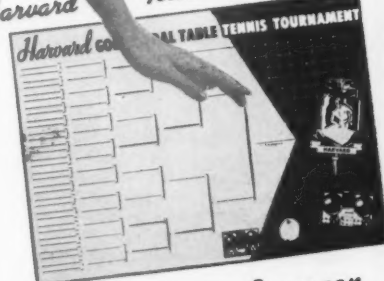
2. By return mail get Free Harvard Tournament Kit...



3. plus Harvard's Table Tennis Teacher



4. Harvard Tournament Charts



5. Report Forms... So we can send winners a Harvard Gold Medal



and winner's certificate



HARVARD
Table Tennis Co.
60 State St., Boston, Mass.



of the discus in flight through use of a wind tunnel. His study is still the basis of what we know about discus action in flight. Understanding how the various forces act upon the discus when it is moving forward has helped us determine individual technique, throwing angles, and meet strategy. In April of 1932, James A. Taylor wrote of Guggenheim's study as follows:

"As an object moves forward, it tends to create a vacuum or rarefied air in back of it. Due to the shape of the discus, when thrown at an angle upward from the horizontal and less

than vertical, the partial vacuum is in back and on top. But there is pressure always below, both normal pressure due to its own motion and also the pressure of any wind which may be blowing. There is, therefore, a constant pushing of the discus up into this partial vacuum. This is the lift and is what tends to make the discus overcome the force of gravity to that extent and appears under certain circumstances to sail. This happens both in still air and when the wind is blowing against the course of the discus. The natural inference is, that the stronger the head wind, the higher

the discus goes and the longer it remains in the air, and hence the farther it would go. This is partially true, but only up to a certain point. The strength of the wind finally becomes such that it kills momentum or forward motion of the discus, and while it goes higher, it falls down straighter, and covers less horizontal distance than if there were no wind. If the wind were strong enough, it would blow the discus backward. What then is the happy medium? It is the point where the lift is the greatest as compared with the backward pressure or drag.

"The tunnel tests show that up to between 7 and 8 miles per hour the elevating effect of a head wind is an increasing help, but that when greater than 7 to 8 miles per hour such help decreases steadily up to 14.5 miles per hour, at which point the head wind becomes a detriment.

"A tail wind shows some rather astonishing results . . . We have seen that with a head wind there was a partial vacuum formed in back of the discus, but when the wind is following the course of the discus there is very much less vacuum formed behind the discus and the pressure of the air against the under side of the discus being less even than in still air, there is not only less lift to elevate the discus at any stage of flight, but the wind blowing from behind and striking the discus at an angle may give even a downward pressure . . . Computations were made up to 14 miles per hour and the results were progressively detrimental to the distance obtained. There was no factor apparent to warrant any conclusion but that the stronger the tail wind, the less distance would be made by the discus."²

As most coaches and athletes realize, a side wind is the most difficult to throw in, and from this study we can understand why. Mr. Taylor shows that when the wind comes from an angle a partial vacuum is formed on one side of the discus tending to turn and tip it.

It is obvious that a head wind of less than 8 miles per hour is an advantage to the thrower if he is throwing directly into it with an initial angle of about 35°. In still air an angle of throw higher than 35° is recommended, and when the wind is blowing from the rear we learn that a theory held by many (that the wind blows the discus farther) is completely erroneous, and a flat, highly thrown

²Taylor, James A., "Behavior of the Discus in Flight," *The Athletic Journal*, April, 1932, Vol. 12, No. 8, pp. 10, 45, 46.

VIBRA-WHIRL'S

BLOCKING SLEDs

. . . rugged construction, unique design make Vibra-Whirl sleds invaluable coaching aids . . .



Vibra-Whirl's exclusive spring design produces a strong recoil from the top . . . teaches blockers to maintain their balance and develop in-balance power! Three-foot spacing between pads allows freedom of movement, cutting down scrimmage . . . and scrimmage injuries. Vibra-Whirl sleds are constructed of heavy channel and angle iron with vinyl blocking pads, so virtually no maintenance is required. Plan now . . . put a Vibra-Whirl sled in your '59 budget.

7-MAN Trains line to work as a unit
SLED Helps eliminate "v" line-up **\$475.00**

3-MAN Works 1, 2 or 3 men. Excellent for running plays with any 3 linemen. **\$295.00**

2-MAN Same design and construction as
SLED 3-Man sled. Designed to rear-up, teaches players to block up. **\$225.00**

WHIRL-POOLS

. . . the most valuable piece of equipment in your training room.



Vibra-Whirl's stainless steel whirlpools put your injured players back into condition . . . fast . . . with powerful massaging action. The force of the water activity is twenty times as powerful as any other whirlpool bath . . . yet it is priced low enough for the most modest school budget. Vibra-Whirl's strong motor circulates over 60,000 gallons of water per hour . . . creating a more vigorous massage that reaches the deepest muscle injuries . . . and puts players back into action faster!

DELUXE **\$435.00**
MODEL
JUMBO
"130" **\$495.00**
MODEL

Vibra-Whirl © and Company

PANHANDLE, TEXAS

SEE YOUR
SPORTING GOODS DEALER

distributed exclusively by
CRAMER'S
OF GARDNER, KANSAS

discus is the only method of delivery.

Beginning Throwing

Unlike some field events such as the broad jump and the high jump, the discus throw is not a natural action which is attempted in some form by children the world over.

Youngsters high jump and broad jump constantly and have a certain feeling once they are taught a form. Discus throwing, however, is not throwing at all, in the sense the general population thinks of throwing. For this reason teaching a boy to throw the discus usually means starting with basic activity and ending with years of practice and literally thousands of throws. This point was brought home to us when Ron Kramer, Michigan's All-American basketball and football player, reported for the discus throw one spring. Kramer had never had a discus in his hand prior to reporting and we both learned quickly that discus technique offers many problems even for one of the nation's greatest athletes. For four months Kramer labored daily, and although he bettered 150 feet, neither of us felt he was able to approach his true potential in such a short time. Two or three years and 3000 more throws and Kramer might have been one of the world's greatest throwers, but there is no quick, easy path to supremacy in this complicated event.

Following the mastery of the hand hold, swing, and scale the beginner must then throw without using a turn. At first he should throw from a stationary position, and then by stepping forward and dropping into throwing position the athlete can master the actual competitive delivery position and action prior to attempting the turn. It should be mentioned that while it may be necessary to learn discus throwing in stages, it most certainly is not to be thought of in those terms once the various phases are put together for competitive throwing.

Throwing From a Stand

The powerful throwing position prior to the release of the discus can be simulated from the stand and must be practiced by inexperienced throwers. This position would find the athlete with his left foot planted close to the forward edge of the circle at about a 30° angle. His toes should be placed about four inches back of a circle diameter and his leg should be semi-straight. The right foot is planted solidly at a 45° angle some 30 inches toward the rear of the circle, with the toes touching circle diameter. The

right knee should be flexed, and the discus drawn well back trailing the right hip and shoulder. The right hip is cocked or closed and the right hip bone is around to the right. The trunk is twisted or coiled clockwise to the right and at a 45° angle to the rear, with the head up and eyes horizontal to the ground. Inasmuch as the left arm has little constructive work to do with successful discus throwing, the best advice concerning it is to keep it relaxed, below the shoulder and, during standing throws at least, around in front of the body to help keep the right shoulder and hip in a closed position.

This position is the power position for discus throwing in both the orthodox style and the Minnesota style.


The application of force on the discus from the power position, from a stand, starts with a violent extension of the right leg as the entire right side of the body, including the trailing discus, lifts and rotates forward, while the hips lead the throw. Simultaneously, the shoulders lift and rotate to the left as the body weight shifts from the right leg to the left leg that is bracing against the lifting and rotating shifting weight. The athlete's chest, chin, and eyes lift slightly but mostly forward as his back

The Original Fiberless Football Pad

Polvonite®

for

ALL-AMERICAN PROTECTION



- Absorbs Greater Shock
- Stops Impact Injuries
- Completely Sanitary
- Moisture Proof
- Weatherproof
- Amazingly Lightweight
- Will Not Cause Fatigue
- Fits Perfectly
- Low Initial Cost
- Negligible Upkeep

All across America, high schools and colleges are giving their players the protection that only Polvonite fiberless football pads can provide.

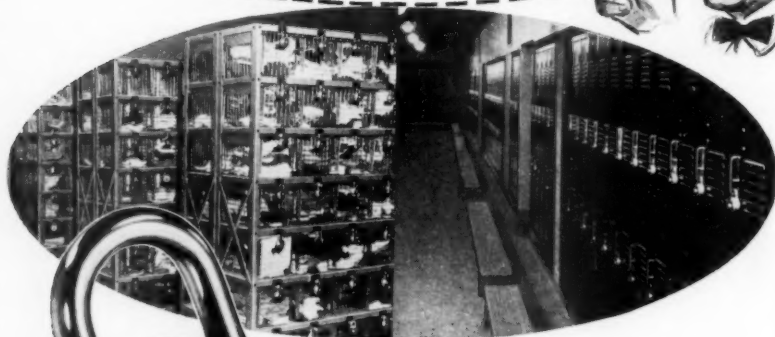
Made from the most shock absorbent plastic foam available, and covered with a tough plastic coating, Polvonite pads prevent injuries, withstand roughest abuse, and yet weigh but a fraction as much as conventional gear.

Write for New
1959 Catalog

PROTECTION EQUIPMENT COMPANY

100 Fernwood Ave., Rochester 21, N. Y.

*Solves our locker room
problem... my control key
opens every padlock!*



Master NO. 1525
Key-controlled
2 year guarantee



Master NO. 1500
Same design and
construction as No. 1525
... but without key
control. Full two year
guarantee.

Master

NO. 1525

COMBINATION PADLOCK

Master Combination Padlocks save you money two ways: low initial cost and long-lasting, trouble-free service. Stainless steel case... rugged steel locking latch... four pin-tumbler key control... cadmium rustproofing throughout... and many other security features.

Master Padlocks

NO. 1 IN AMERICA'S SCHOOLS

Master Lock Company, Milwaukee 45, Wis.
World's Largest Padlock Manufacturers

arches. Combined with the forward lifting and rotational action of the body, the athlete exerts a steady, strong, almost horizontal pull on the discus, always in the plane in which the discus is to be released. The final impetus that the athlete gives to the discus is on the end of the pull as the thrower rides high over the left leg and cuts into the discus with his index finger and wrist snap. When the novice thrower has thoroughly mastered the power position and delivery from a stand, or by stepping forward into throwing position, he may direct his attention to turning with the discus through the circle to add momentum. In doing so, the vast majority of throwers use $1\frac{3}{4}$ turns and either the orthodox style or the fast but more complicated Minnesota style.

Next month we plan to discuss the orthodox style and the Minnesota style, and then in conclusion will present our views on competition and training.

Intramural Program

(Continued from page 46)

sponsible for furnishing his own shoes. After each time period, and at the end of the game, it is his duty to check each team's score.

Throughout the school year the various officials receive careful instruction from the director. He meets frequently with his officials and supervisors especially during the early part of each season. The director backs up the officials whenever necessary by imposing penalties for teams or players who are guilty of misconduct.

The most important job held by a member of the Key Club is that of student director. His responsibilities include readying the play area, seeing that games are run off smoothly, maintaining order, settling disputes as they arise, and clearing the area after a game. The student director is also expected to make official reports of all injuries.

The last unit in the organizational chart at Lima is that of team managers or captains. Their responsibilities are as follows: check on the eligibility of each of the team members; aid in selecting team members; coach the team; know and follow the schedule of games for the team; know and follow the rules of the games; and see that the team members are properly dressed for the games.

Units of Competition

Two major classifications for units



EYEGGLASS HOLDER

Holds glasses from slipping, sliding falling off or being accidentally knocked off in any sport. Adjustable rubber tips will fit any size bow ends. Easy to slip on and off. Retail \$1.00 each.



WHISTLE MOUTHPIECE COVER

Neoprene rubber. No metal can touch you. Washable—complete protection to lips and teeth. Locked on to stay on. Colors—red & white. 40¢ each.



WHISTLE LANYARD

New improved synthetic "N" rubber. Resists body oils, salts, perspiration—washable. Brown color. Special easy to use stainless spring steel snap catch. Positively holds. Retail \$75¢ each.

AT ALL SPORT SHOPS OR WRITE

SERON MFG. CO.

Barber Bldg.

JOLIET, ILLINOIS

of competition are employed — one for team sports, and the other for individual sports. The grade level is the favored unit for each. The major unit for team sports is the grade — sophomore, junior or senior — which is subdivided into teams within the gymnasium classes, which number about 10 in each grade. Since these classes are usually quite large, they are often subdivided into two weight groups, depending upon the sport. The members of the teams are selected by the team captain who is selected by the class.

The grade as the unit of competition is used for most of the individual sports. Bowling, riflery, and golf divide players from all three grades into groups according to a system of handicaps, while wrestling and boxing use weight as the basis of classification.

Program of Activities

Of the 20 sports offered, 10 are identified as vigorous and 10 as non-vigorous. Six are team sports and 14 are individual activities. It is felt that the preponderance of individual over team sports stimulates interest and compensates somewhat for the emphasis given to team sports by the varsity athletic program.

The following sports are offered: fall — bowling, cross-country, football skills, touch football, and volleyball; winter — badminton, basketball, bowling, boxing, free throw shooting, gymnastics, riflery, spot shooting, swimming, table tennis, and wrestling; spring — golf, horseshoes, softball, tennis, and track and field.

Methods of Organizing Competition

The most popular type of tournament used is the round robin. It is used for the more popular sports of volleyball, football, basketball, bowling, table tennis, and riflery. The single elimination is used for badminton, boxing, free throw shooting, riflery, shuffleboard, spot shooting, and wrestling. For tennis, and wrestling the ladder tournament is employed. The Olympic meet plan is utilized for cross-country, football skills, golf, gymnastics, swimming, track, and wrestling.

Point System and Award Plans

Until recently the director employed a point system for groups and individual competitors which was intended to provide more motivation and thereby increase participation. The great amount of clerical work demanded, when compared with the meager advantages, led to the aban-

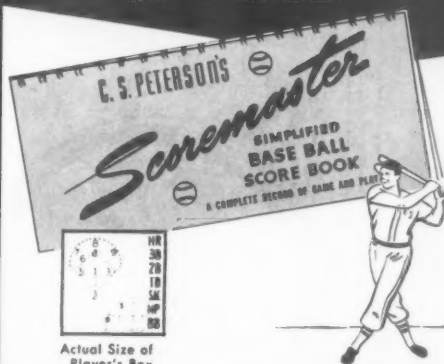
TOP FLIGHT PERFORMANCE

U. S. PATENT

ALUMINUM TRACK EQUIPMENT

ALUMINUM ATHLETIC EQUIPMENT CO. Box 145 WYNNEWOOD, PA.

SCOREMASTER BASEBALL SCOREBOOKS ARE PREFERRED BY SPORTS WRITERS, COACHES, ANNOUNCERS...and the Public!



- ★ The Quick, Easy, Accurate Way to Score a Ball Game
- ★ A Permanent Record That Gives You Every Detail of Every Play

You don't miss a play. The SCOREMASTER way of keeping score lets you keep up with the action and still enjoy the game. No wonder everybody, for every purpose, prefers SCOREMASTER... the modern way to keep baseball records!

BUY SCOREMASTER SCOREBOOKS FROM YOUR SPORTING GOODS DEALER



Scoremaster COMPANY
P. O. Box 46038, Hollywood 46, Calif.



Silk Satin TRACK AWARD RIBBONS

- Lettered in *GOLD LEAF* in all places on finest quality silk satin ribbon.
- *FIVE COLORS* available for place winners: *Blue*—first place; *Red*—second place; *White*—third place; *Yellow*—fourth place; *Green*—fifth place.
- Official, Judge, Starter and Coach in Gold on White Ribbon.
- Ribbons contain Name of Meet, Year, Event and Winner's Place.
- All Events for Track, Swimming, Playground Meets and Literary Contests.

18¢ Per Ribbon Minimum Order \$3.60

We carry a complete line of Trophies and Medals

Write for further information.

Order direct. Not sold thru dealers.

The House of Harter
CARRYING LARGEST STOCK OF SPORTING GOODS IN THE MIDDLE WEST

42 HARTER BLDG., GOSHEN, INDIANA

donment of this system.

Awards are viewed as symbols of recognition of accomplishment rather than as devices for motivation, and are given only to the winners in the seven most popular sports which are basketball, spot shooting, free throw shooting, bowling, table tennis, track, and swimming. All awards are presented to individuals. Five types of awards which are given in ascending order of their cost are: certificates, shoulder patches, medals, keys, and trophies. As many as 200 certificates are awarded during the year. These awards are presented at a special intramural meeting which is held at the end of the school year. This ceremony is recorded on tape and broadcast later from the local radio station.

Rules and Regulations

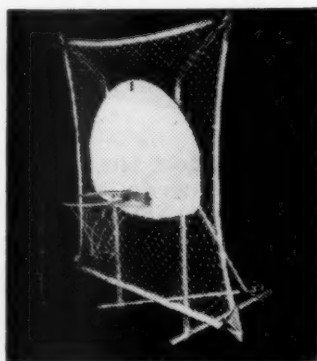
Two types of rules and regulations govern intramural competition at Lima. There are rules governing individual sports, and those dealing with general conditions prevailing in all sports.

The first set is derived mainly from standard rules which are widely accepted among high schools. The second set of rules deals with general matters such as the eligibility of players, forfeits, and protests. They are all evaluated each year by the committees.

The following rules are in effect and are given in the constitution:

1. A student who has received a varsity letter shall not be eligible to compete in the intramural program in that particular sport.
2. A player who has entered one sport with a given team may not transfer to another team in that same sport after one game has been played by his team.
3. A team shall forfeit any contest in which it uses an ineligible player.
4. Any player in varsity or junior

Step-Up Interest In Your Swimming Classes



WITH THE NEW AALCO SWIMMING POOL BASKETBALL OUTFIT

Beautifully designed, ruggedly built of heavy aluminum pipe and tubing, this new aquatic basketball outfit provides a new world of fun in the water for everyone. The fan-shaped Backboard, made of a specially treated Presdwood, is weather-resistant and will not soak up water. It is equipped with a 16" dia. Goal and Net, can be raised or lowered to suit the swimmers. The net backdrop measures 6' x 6'. A simple adjustment in rear allows easy leveling of unit. It can be folded up for \$63.00 storage. No. WPB-1

See Your Sporting Goods Dealer
AALCO MANUFACTURING CO.
2737 Wyandotte St. St. Louis 11, Mo.

New Aristo MICRO-SECOND TRACK TIMER



SEE YOUR DEALER
FOR THE BEST
TRACK TIMER
EVER DESIGNED

ARISTO IMPORT CO. INC.
630-5th Ave. New York 20

EXPRESS SPEED SERVICE FILM DEVELOPMENT

**Black & White or Color
FOOTBALL - BASKETBALL
SPORTS - BAND - HOMECOMING**
The complete "around the clock" motion picture service you want and need no matter where you are located. You get film, development, splicing, mounting on reels and cans and fast return all at one low price. Write today for price list #58A for complete details, or telephone Bob Roush—Andover 3-1677.

A-V MOTION PICTURE SERVICE

P.O. Box 5608
Chicago 80, Illinois

varsity competition who is scholastically ineligible will also be ineligible for intramural competition.

5. A player may not play on more than one team in any sport.

6. A player at the varsity or junior varsity skill level who is not out for the varsity sport may not compete in that sport in intramurals.

7. Physical examination by a doctor may be required at the discretion of the intramural director.

8. Holders of excuses for physical education classes may not participate in intramural sports.

9. All protests must be submitted in writing within 24 hours after the contest in question.

10. A team forfeits a match if it fails to appear within five minutes of the scheduled time of play.

11. Teams in all sports must have the legal minimum present in order to start play.

Facilities and Equipment

Lima Senior High School has the following facilities: a double gymnasium, two large gymnasium balconies each 30 by 20 feet, an auxiliary gymnasium or activity room 40 by 62 feet, two hard-top playgrounds, and a running track. There are eight different off-campus facilities. A city park two and one-half blocks away furnishes areas for contests such as tennis, softball, horseshoes, and cross-country. The playground area of the park equals six regulation football fields, and the perimeter serves as a two-mile cross-country course.

The YMCA, less than two blocks from the school, lends its pool for swimming. For rifle matches, the students walk just one block to the range set up by the Lima Rifle Association. Nearby is the National Guard Armory, which allows the high school to use its eight horseshoe pits.

Other facilities are not quite as convenient. Supplementary tennis courts are available at the elementary school and the golfers use two golf courses.

Equipment furnished to the intramural players is of first quality, and no seconds or hand-me-downs from the varsity are used. The physical education budget is the source of the funds used for the purchase of equipment, and the director turns in his requisitions to the principal. Intramural supplies are stored separately from those of the varsity teams or physical education classes.

Publicity

The nine media for publicizing

Lima intramural activities, in descending order of their estimated value are: bulletin boards, school newspaper, intramural handbook, public address system, posters, local radio and television stations, city newspaper, school annual, and class notices.

The bulletin boards are especially effective because they are located in the hallway near the main entrance of the gymnasium and in the cafeteria. They are maintained by the student managers, and are filled with interesting material.

Finances

With the exception of \$60.00 from student activity fees allotted to the program to pay for awards and engraving, the necessary funds come from the physical education budget. The principal pays \$12.00 for the use of the YMCA pool. The cost of operating the intramural program at Lima is low considering its breadth, because of savings in such areas as the publication of the handbook by the printing department, maintenance of equipment by the home economics and shop departments, generous cooperation of the community, in general, and the cooperation of service clubs and individuals.

First at the finish with Wilson Track Equipment

From the starting blocks to the watch at the finish line, you're always "First" with Wilson Track Equipment.

And winning points everywhere are the new Wilson Riteweight track shoes. There is speed in these colorful shoes which feature Wilson's ultra light and flexible *Flexibond* construction.

There's winning style too in the Wilson track uniforms. Tailored for finish-line freedom, there's a wide variety of styles and color combinations available.

So be "first at the finish"... you'll be first with the most when you look to Wilson for the finest in track equipment.



Right here

WHERE SPEED IS BORN,
WILSON DOES IT BEST!

Win With Wilson

WILSON SPORTING GOODS CO., CHICAGO (A subsidiary of Wilson & Co., Inc.)

NOW the *real thing* comes to coaching!

Super-Deluxe

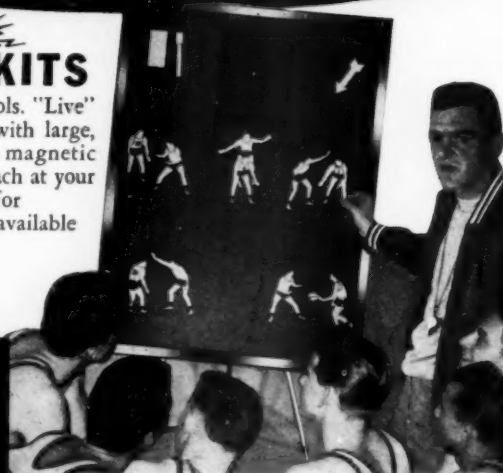
PLAYMASTER

Magnetic COACHING KITS

No fuss, no muss, no symbols. "Live" player action all the way with large, colorful PLAYMASTER magnetic "demonstration team". Coach at your top speed. Have more time for extra-payoff practice. (Also available for football.)



PLAYMASTER KIT No. PMS-33
24" x 36" steel board (as shown)
32 "live" action magnetic players
2 magnetic basketballs
1 steel player carrying case
4 position-keyed trays
for "benching" players
1 magnetic chalk-holder
1 magnetic eraser



Other Famous PROGRAM AIDS Products:

SCORE-KING Magnetic Scoreboards • ERASO Posters and Charts •
SPOT AWARDS • RECORD-MASTER Hall-of-Fame Displays •
DESK-MINDER • PLAYMASTER Magnetic Visual Coaching Aids
See Your Sporting Goods Dealer or Write For FREE Full-Color Catalog To:

THE PROGRAM AIDS COMPANY, INC.
Dept. AJ, 550 Fifth Avenue, New York 36, N. Y.



NATIONAL GYM MATS

STANDARD
JIM-FLEX
GOAT HAIR
CATTLE HAIR
ENSOLITE
PLASTIC FOAM
PLASTIC COATED DUCK
MAT COVER
MAT TRUCKS
SAFETY WALL MATS

WRITE FOR FREE

GYM MAT CATALOG WITH
LOW PRICES!

SATISFACTION GUARANTEED

NATIONAL
Sports Company

362 N. Marquette St. Fond du Lac, Wis.



BASKETBALL SCOREBOARDS

- ★ SYNCHRONIZED FLASHERS
- ★ DIRECT-READ TIMER
- ★ LARGE NUMBERS
- ★ VIBRATOR HORN
- ★ REMOTE CONTROL
- ★ WELDED FRAME

For literature and prices write

M. D. BROWN CO.

2211 Lake St.

Niles, Mich.

OLSON

TRACK AND FIELD SCORE CARDS

• You can't run your meets without an efficient system of recording results. This is the original recording and filing method in field.

• These cards are sold in sets. Each set consists of one card for each event plus a Summary Filing Folder for recording results and other pertinent data.

• Start a permanent record system by ordering a set for each of your meets.
90¢ per set

CARL OLSON, Box 567, Patchogue, N.Y.

Place Hitting

(Continued from page 41)

hit home runs. People came to see him do it. He could not change his style of hitting just because the fielders were overshifting on him. Of course, occasionally Joe had no alternative but to hit a few balls into right field, just to keep the defense from getting too dishonest.

Players who attempt to become adept place hitters are those who do not usually have the power to become home run hitters. Don Mueller is one of them. Don hit a very handsome .342, and there is no more scientific hitter in baseball today, with the possible exception of Roberto Avila who won the American League batting crown with a .341 mark. Both these players are excellent place hitters.

Batters small in stature, and who lack the power necessary to become consistent home run hitters should practice until they become accomplished place hitters.

NEW BOOKS

How to Coach Fast Break Basketball, by Michael Esposito. Published by Prentice-Hall, Inc., Englewood Cliffs, N. J. One hundred and seventy-one pages. Publication date Jan. 5. Received for review Jan. 7.

Michael Esposito devoted his entire text to the fast break, and a more thorough job could not have been done. After discussing the basic fundamentals and the selection of personnel, he delves into the subject by describing the different fast break systems and how they operate from the various zone defenses and the man-for-man as well as against full court and half-court presses. Concluding the material on the offensive side of the fast break is a chapter devoted to the blending of the fast break with a deliberate style of play. The author considers the man-for-man defense the most effective to use against the fast break. He also discusses the different types of zones as well as the presses, analyzing each as to player personnel. Strategy, both offensive and defensive; suggestions on scouting fast break teams; suggestions on installing the fast break; and a daily practice schedule conclude this excellent text. The book is illustrated and contains 100 diagrams. We feel it is a valuable addition to basketball literature.

440 Record Holder

(Continued from page 7)

tune seemed to take hold of our champion. One morning Dave stepped off a curb and received a bad sprain which kept him off his feet for almost two weeks. He could only do jogging for another two weeks, but when the city indoor meet rolled around Dave was in good enough shape to run away from everyone in the field.

A 48-second 440 was set as his goal for the year. The first outdoor workouts were over the short distances.

Monday—1. Up the ladder — 25 yards, 50 yards, 75 yards, 100 yards, and 150 yards. The only rest granted was the walk back to the start. 2. Sprinting the curves and walking the straightaways. The idea of running as close to the lines as possible was stressed. 3. Pacing through a 660.

Tuesday—1. Three 330's at 39 seconds. Walk a lap between each. 2. Starts going 50 yards on each. 3. Pace through an 880.

Wednesday—Repeat Monday's workout.

Thursday—Repeat Tuesday's workout.

Friday—Ten 120-yard pick-ups on the grass.

The first meet of the outdoor season was held in the rain and on a heavy track at Bethany, West Virginia. Dave ran a 48.5 that day and amazed everyone. Any sprinter who could set that time under the existing weather conditions had an excellent potential on a good track. When the season was underway, there were two meets a week for several weeks. Tuesday and Saturday were our meet days. This schedule did not allow time for much work between meets. A great deal of Dave's training for the balance of the season was in the 330's and 660's.

The 330's were gradually lowered to a point where he was really going all-out to hit 36 seconds. This work was done on Wednesday and Thursday, so Dave was only getting one full day of rest before a big meet. After the second week in May, we stopped all force work during the week and worked on starts and pick-ups on the grass. After his final week of 330 work, Dave responded with 47.8 at the Miami (Ohio) Relays. The last two weeks of the season he had a 46.8 440 in the district meet, and in his final meet, the state meet, he won the 100 in 9.7, the 440 in 46.6, and the 220 in 21.2 seconds.

Looking over his times in the three

For that Extra Ounce of Endurance!



Daily Nutritional Bonus!

One Ounce of Kretchmer's Wheat Germ
Supplies the Following Percentages of
Recommended Daily Dietary Allowances

NUTRIENT	MALE			
	age-10	16	25	45
Thiamine	38.0%	25.0%	30.0%	33.0%
Riboflavin	10.0%	7.5%	11.0%	11.0%
Niacin	9.5%	6.5%	7.5%	8.0%
Vitamin C	4.8%	3.6%	4.8%	4.8%
Vitamin B ₆	16.0%	16.0%	16.0%	18.0%
Protein	13.5%	9.5%	14.5%	14.5%
Iron	20.0%	16.0%	20.0%	20.0%
Phosphorus	19.0%	16.0%	28.0%	26.0%

Vitamin E. Wheat germ is the richest NATURAL source of Vitamin E.

Sodium. Wheat germ is low in sodium. For this reason, it is recommended as a source of good quality protein for persons on sodium-restricted diets.

NOTE: These Percentage Values are Slightly Higher for Girls and Women.

It's a scientifically accepted fact: an athlete's endurance—his energy to last—depends to a large extent on the efficiency with which his body utilizes carbohydrates—the energy foods. And strong evidence indicates that wheat derivatives—when consumed regularly—contribute greatly to this process.

Try adding Kretchmer's Wheat Germ to your training regimen—and check the results! Kretchmer's Wheat Germ is available through grocery stores—everywhere.

KRETCHMER wheat germ

Write for "Suggested Ways of Feeding Wheat Germ to Athletes in Training."
KRETCHMER WHEAT GERM CORPORATION
CARROLLTON 1, MICHIGAN

• Name of independent testing laboratory supplied on request.



QUALITY

Powers

ATHLETIC WEAR

THE POWERS MANUFACTURING CO., Waterloo, Iowa

Suits the
Player
in Every
Sport

DOWMETAL Crossbars

These triangular hollow bars are the truest, most practical, longest lasting crossbars on the market.

Now more popular than ever

- Official ● Long Lasting
- Less Sag ● Uniform ● Safe

Metal is patented magnesium alloy especially suited to bending.

WEIGHT AND PRICE

12' (jumping)	2.0 lbs.	\$5.95
14' (jumping)	2.3 lbs.	6.70
16' (vaulting)	2.6 lbs.	7.45
18' (vaulting)	3.0 lbs.	8.20

Transportation charge extra.

More crossbars sold last year than ever before, showing increased popularity.

Write for name of dealer nearest to you

K. & P. Athletic Co.

1115 Jerome St. Midland, Mich.

Coaches, Athletic Directors

Aid your program with

1. Organization and Administration of the High School Varsity Club

This booklet covers: 1. The Club School Service Program. 2. The Club Constitution. 3. The Club Formal and Informal Initiation Program. 4. Club Financial Program. 5. Club Organization. 6. Club Membership Requirements. Price \$1.50

2. Locker Room Slogans

Give your team that psychological lift through the use of locker room slogans. Slogans are available in sets of 20 in assorted colors on cardboard ready for immediate use. Price \$1.50

Send Check or Money Order to:

ATHLETIC ENTERPRISES

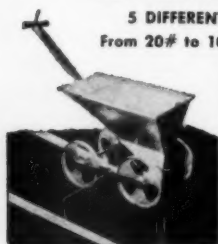
727 Winter Ave.,
Big Rapids, Mich.

NEW AND IMPROVED

RYAN'S H. & R. DRY LINE MARKERS

5 DIFFERENT MODELS

From 20# to 100# Capacity



Force Feed — Instant
Shutoff—50 lbs. Capacity.

Shaker in Hopper
for Constant Flow.
Adjustable Control
on Handle.

**SAVES TIME AND
MATERIAL**

Send to Dept. A for booklet on four other models
H. & R. MFG. CO., LOS ANGELES 34, CALIF.

racers for three years, Dave's best times were as follows: Tenth Grade — 10.0, 22.3, and 49.9. Eleventh Grade — 9.85, 21.8, and 49.6. Twelfth Grade — 9.7, 21.2, and 46.6.

With the exception of one time trial, Mills never ran a 440 during practice. Most of his work was done in the 330 and 660. The time was always given at each 110 yard mark so correct pace could be practiced. Mills had the ability to judge his pace well and could always hit the 220 mark in the time asked. When he set the national 440 record, we told him to hit the first 220 in 22 seconds. His time was 22 flat.

Being a sprint-type quarter-miler he was able to get a fast start and stay out of trouble. In many races, after coming out of the chute, Dave would select the best lane for the balance of the way to the curve.

There are always some factors which help a boy achieve success. During his high school career Dave never drove a car or took the bus to school. He lived a mile and a half from school and walked both ways. During the summer he spent many hours on his racing bike, riding wherever he had to go. Wheat germ was added to his diet and he used it daily. He also took soda mint pills after a race to settle his stomach.

Dave never ran the 880 in competition, but he is made for that distance. He ran a time trial in that distance one day and came in with a 2:01 without forcing himself. With proper work for the 880, we are sure he could have been in the 1:55 group.

Dave had the mental attitude necessary to become a great track man. He was one of the finest boys with whom we ever worked. He put out 100 per cent and was always willing to help the younger runners. His opponents always looked up to him, not only for his running ability, but for his fine sportsmanship and his ability to maintain modesty. His goal is to run with the 1960 United States Olympic team. Dave will become a U. S. citizen before the next Olympics. A coach could not ask his own son to be a finer person. In his final performance in the 440, Dave gave all who worked with him a thrill they will never forget.

Distances

(Continued from page 8)

should be a spontaneous urge, something that should not be dictated by the individual or others. A distance man should train each day.

The use of a stop watch in training should be discouraged. It should be used only for trials when the athlete wishes to test himself. Running against the stop watch with specified times for each section of work can bring on lethargy if the distance man does not achieve the times he has set out to accomplish.

Training should not be conducted in groups. This type of training tends to bring about a racing effect. Some distance men cannot maintain the speeds of others. Since racing is an individual effort, training must be conducted for the individual athlete.

As we mentioned previously, training for distance running should be a spontaneous urge. The application of distances run in training should also be spontaneous. Although we do not advocate alternating work in training, this definitely has a marked effect on man's physical well-being. When used, this type of training should be moderate.

Many coaches do not consider that the ability to move over the ground efficiently and economically is essential, and they place little emphasis on upper body development. The upper body is the motor or engine, and the legs should be considered as the wheels. If the motor is not strong enough, it will not turn the wheels. While it is true that many athletes have natural ability, those who do not will be able to overcome their discrepancies through the use of resistance exercises. Any form of resistance exercise is beneficial.

We have experienced success with weight lifting and sand running (mainly over sand hills.) All of the work should be carried on in the off-season, and should be continued for a minimum of three months. After training in this manner, the athlete will find that his running will be a little sluggish when it is time to return to the track. As he continues his daily exercise, he will find that when the sluggishness wears off he has strength and power, something which has been developed. He will also find that the strength and power which he has acquired diminishes little over the years.

If running can be done before the weight training session, it is advisable. This program is to be started at the conclusion of the track season. A typical week's workout during the off-season would be as follows:

Monday—Fartlek 5 miles. Weight training.

Tuesday — Fartlek 10 miles.

Wednesday — Fartlek 5 miles. Weight training.

Thursday — Fartlek 10 miles.

Friday — Fartlek 5 miles. Weight training.

Saturday — Fartlek 10 miles. Weight training.

Sunday — Fartlek 10 miles. Weight training.

The athlete must want to be up. He must exaggerate the degree of lift by being conscious of his running at all times. Lift means to run over the ground, not into it. Many athletes are not conscious of their movements. In every move that is made in training, the athlete must be conscious of its effect. Even when he is walking or sitting, he must want to be up.

Most athletes feel that in training for distance running, long hours on the track must be endured. If one can afford this time, the longer spent at it the better. For those who cannot afford the time, an hour and a half each day will be sufficient. This hour and a half should be spent on continuous running, but if the athlete can do two hourly sessions daily, it is to his advantage.

Although we do not advocate training schedules, we would like to show what could be done in a seven-day workout with two sessions daily.

Morning — Monday — Fartlek 6 miles. Tuesday — Fartlek 6 miles. Wednesday — Fartlek 6 miles. Thursday — Fartlek 6 miles. Friday — Fartlek 6 miles. Saturday — Fartlek 6 miles. Sunday — Fartlek 6 miles.

Evening — Monday — 220 yards. Jog 220 yards. Tuesday — 330 yards — 110 yards. Rest by jogging. Wednesday — 110. Jog curves and run the straightaways. Thursday — 220 yards. Jog 220 yards. Friday — 110 yards. Jog curves and run the straightaways. Saturday — 330 yards — 110 yards. Rest by jogging. Sunday — 220 yards. Jog 220 yards.

The actual amount of work the athlete will do in the evening session depends largely on his capabilities. He will continue to exercise until he is reasonably tired. Then he will rest by jogging, and continue to work in this fashion until he has a feeling of complete weariness. Henderson never runs more than the 330's described at any time during training.

When actual racing starts, training is somewhat curtailed. The athlete will continue to work hard until Thursday. On Thursday 220's are preferred and the athlete will be justified if he can gauge his training to this point. A workout is usually scheduled on Friday morning which consists of about 6 miles Fartlek. Sometimes, depending on the athlete's attitude, a light workout could be done in the evening, a sort of active rest but very light, two miles or so.



Free CATALOG
FREE complete, fully illustrated, 36 page catalog in color is yours upon request . . . write for it today.



Makes the difference on any field...



**Action styled for 1959
Order Early**

Always a standout in any competition — football jerseys . . . pants . . . accessories . . . sideline clothing . . . hose. Top grade fabrics combined with top grade manufacture give you a winning combination. You always get quality when you select SAND knit. SAND knit is recognized and accepted by coaches and athletes alike as the standard of quality.



SAND KNITTING MILLS CORP.
BERLIN • WISCONSIN

The finest and most complete line of exclusive Athletic Knitwear and Clothing.

SOLVE BUDGET PROBLEMS

Shop from this FREE

Stretch your budget and provide a greater array of quality supplies for your gymnasium with this value-laden catalog as your guide.

TRADE-IN YOUR OLD EQUIPMENT on finest apparatus available. Send post card to:



Department H
GYMNASTIC SUPPLY CO.

250 West 6th St. San Pedro, Calif.

Naden SCOREBOARDS



Basketball Model N-525 is shown above. Write for complete catalog A1 — Also Football A2 and Baseball A3

NADEN INDUSTRIES Webster City, Iowa

1st Annual

NATIONAL-CAPITAL

FOOTBALL CLINIC
MARCH 2-3-4-5, 1959
Sheraton Park Hotel —
Washington, D. C.

Your Host
TOUCHDOWN CLUB OF WASHINGTON, D. C.

America's Outstanding
Football Organization

Greatest Array of Football Coaches Ever
Assembled at One Clinic

★ TERRY BRENNAN
★ PAUL "BEAR" BRYANTAlabama
★ PAUL DIETZELLouisiana State
★ RAY ELIOTIllinois
★ FOREST EVASHEVSKIIowa
★ TOMMY MONT
★ EUGENE "BO" SHERMAN

George Washington
★ JIM TATUMNorth Carolina
★ BOWDEN WYATTTennessee
Washington Has Many Types of Entertainment and Attractions. Hotel Rates from \$5.00

Registration Fee \$30.00

For further information write:

NATIONAL CAPITAL FOOTBALL CLINIC

8720 Flower Ave.,
SILVER SPRING, MARYLAND
This is a new Clinic—not to be confused with any others

**Prescription Ground
BASKETBALL GLASSES**
Meet U. S. Gov't. Safety Standards



**Precision Built — Shock Resistant
Case Hardened — Light Weight**

They're built to withstand rugged wear and hard knocks. Lenses are ground to the exact prescription of the individual player from finest optical glass, then case-hardened to meet Gov't. Standards for safety. Full vision—comfortable—rigid. Lenses are set in frame of non-corrosive white metal, with elastic head band for players or conventional temples for coaches and officials. Truly they're "tops" for practice or games. When ordering, send prescription and size of present lenses. Allow 5 days for delivery.

\$21.75 per pair

Free brochure on request

PRECISION ATHLETIC GOGGLE CO.

Dept. 235-B, Rochelle, Ill.

TREAT INJURIES!

**WITH PORTABLE
NON-ELECTRIC
WHIRLPOOL
BATH**

Treat sprains, stiffness, sore muscles and other conditions requiring moist heat and massage. Set up in shower area (tub) or bath tub. Recommended by coaches, trainers, doctors. Unconditionally guaranteed.

\$49.95 Complete

If not available at your Sporting Goods Supply Store, Write for 10 day free trial, or literature.

LAURENS LABORATORIES

Dept. A), 1801 Eutaw Place, Baltimore 17, Md.





NEW! Jayfro
Multi-Purpose
ALUMINUM
STANDARD
Use it 12 Ways!

Interchangeable
Indoors and Outdoors for:

- VOLLEY BALL • BADMINTON
- TENNIS • PADDLE TENNIS
- HIGH JUMP • TETHERBALL

Send for FREE CATALOGUE

Jayfro
ATHLETIC SUPPLY CO.

Dept. C, Box 1065, NEW LONDON, CONN.

A New Type of Incentive Award



ALMOST all track and field coaches face an incentive problem. As a matter of fact, this puzzle is usually threefold.

First, a problem which many coaches face yearly is that of having their charges set high enough seasonal goals — goals which will force the aspirant or seasoned runner to extend himself to his utmost in both meets and practice sessions.

A second knotty problem in this sport is that which concerns itself with those boys who are relatively consistent point-gainers, or at least colorless, hard-workers, but who rarely break into the circle of winners. These boys tend to become discouraged because they are never in the limelight, and feel as if their efforts are going unrewarded.

A third puzzle which many coaches encounter is that of encouraging runners to attempt new events. The discovery of new talent and the availability of extra men in relay events will be increased if the boys will only venture into new fields with a willing attitude.

The standard award program presents a solution to all of these problems. Basically, here is how the program works. A standard time or distance is set for each track or field event. The standard should be set high enough to be an inspirational goal, but it should also be within the grasp of the top two to four boys in each event. The exact number of boys

will depend upon the size and composition of the team. Setting the standard is a problem which each individual coach, equipped with full knowledge of his team, must decide for himself. At no time, however, should the standard be lowered — it should be raised yearly, as the team improves, or in weak years at least kept at the same height.

At the beginning of the season placards stating the standards in each event should be posted, and the awards for reaching these standards displayed.

Some coaches may feel their budgets will not permit awards. We felt that way when we heard of the standard program in England. In that track-minded nation, standards are set in every event from the shot put to the marathon. Furthermore, there are club, county, and national standards, each proportionately more difficult to attain than the one which precedes it. When a competitor satisfies a standard requirement, he is given a medal which commemorates his performance in the event, and the date of the performance. His name is placed on the medal. This is an expensive, though a worthwhile endeavor.

We considered the expense involved and decided to use a standard certificate, as shown in the accompanying illustration. As will be noticed, provisions have been made upon it for all of the information found on the British standard medals. It means

By NORMAN C. LUMIAN

Track Coach, Aviation High School, Redondo Beach, California

NORMAN LUMIAN graduated from the University of New Hampshire and received his master's degree from Harvard. He coached at Morningside High School from 1953-1957, and assumed his duties at Aviation High School in September, 1957. Lumian has been appointed head track and cross-country coach at Orange Coast College beginning in September of this year.

as much to the boy, and it is inexpensive. Our certificates were turned out by the print shop instructor, at no expense to us. He felt that such a project was definitely within the scope of his shop. We are sure that the cost, if these were produced by a commercial printer, would be moderate.

When we spoke of the English system, club, team, county, and national standards were mentioned. Why could not we emulate that idea by setting up, with the cooperation of fellow track coaches, league or conference, state or regional, and national standards? This system would be an excellent incentive for track and field.

Play of the Catcher

(Continued from page 30)

how many steps there are to the screen.

Pop flies that go behind the plate (foul) will normally curve back toward fair territory as they come down. For this reason, the catcher plays the ball away from his body (Illustrations J3, J4, and J5), thus allowing for the curving ball.

The catch should be made chest high with the mitt and bare hand up — thumbs towards the outside.

Pop flies that are hit in fair territory or directly over the catcher's head will curve away from the catcher as the ball comes down. Here again, the catcher must flip off his mask away from the ball (Illustration K1), look for the ball quickly, and move out, running on the balls of his feet to avoid jarring, thus causing the ball to be blurred (Illustrations K2 and K3). On this type of pop fly the catcher plays the ball just off his forehead, as it will curve away from him at the last moment (Illustration K4). This action enables the catcher to catch the ball in normal position with the pocket of the glove face up and chest high (Illustrations K5 and K6). By playing the ball as though it would hit him on the head, he is making allowance for any last-minute adjustment either forward or backward.

\$55 to \$205... there's an OCEAN POOL



OCEAN STANDARD starts at \$55

Most popular board ever built. Low price, high grade board of Douglas Fir lumber. Tips reinforced with cold rolled steel "blind" stitch bolts. Board is finished with new Polyrestys SaniTread eliminating need for Cocoa Matting. 8' to 16' lengths.

OCEAN'S LAMINATED FIBERGLAS® DIVING BOARD starts at \$135.

Improved flexibility and added "lift." Greater tensile strength because of FIBERGLAS... sunproof, waterproof. Wood core of finest Douglas Fir core, laminated with strongest glue. Face of board has slip preventative abrasive imbedded in plastic resin... no matting needed. Easy to keep clean, sanitary. Three year warranty.

No Ocean Laminated FIBERGLAS diving board has ever broken!

OCEAN'S FIBERKOTE® DIVING BOARD (Fiberglass face) starts at \$80

Many advantages of Fiberglass board, at very little more than a wood board!

Also a complete line of ALUMINUM BOARDS

the complete headquarters for swim apparel and accessories since 1883

OCEAN POOL SUPPLY CO.

155 WEST 23 STREET, NEW YORK 11, N.Y.

FREE... send for catalog D of complete line.

YOU BET THERE'S A DIFFERENCE

in Trampolins!...
The difference is

Gym Master

A difference in durability—16 points of direct support to the perimeter frame, ROUND steel tubing, proven to give the greatest possible frame strength.

A difference is safety—Four separate leg sections mean the only trampoline with REALLY all-clear understructure.

A difference in performance—steel springs or rubber cables, nylon web beds, specially woven and with extra stitching... AND the famous Quick Turn Adjuster for precise bed tension.

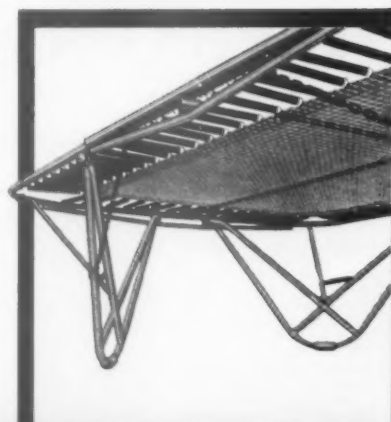
Check these and other Gym Master exclusive features and you'll agree—

Gym Master is built better where it counts most!

THE VARSITY 6 ft. x 12 ft. nylon web bed
9 ft. x 15 ft. frame

THE JUMBO 7 ft. x 14 ft. nylon web bed
10 ft. x 17 ft. frame

Write today for complete information



FENNER HAMILTON TRAMPOLIN CO.
3200 SOUTH ZUNI STREET • ENGLEWOOD, COLORADO

YORK

Sensible Weight Training Methods

have helped to make many athletes stronger, faster and better — such as Rev. Bob Richards, Parry O'Brien, Harold Connolly, and thousands of track, baseball, basketball and football stars.

YORK BARBELLS

are famous the world over. When you want the best in weight training equipment—come to

YORK BARBELL COMPANY

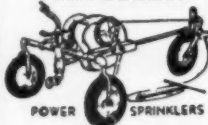
YORK, PA.

COACHES: Send for free copy of *Strength and Health*, the magazine that stresses weight training for athletics. Ask also for the famous YORK catalog.

AUTOMATIC IRRIGATION

"Set it and Forget it"

TRAVELRAIN



Established 1935
Write for information
and free trial offer.

TRAVELRAIN

362 N. Canon Dr., Beverly Hills, Calif.

INEXPENSIVE—
DESIGNED FOR
ATHLETIC FIELDS

Waters Areas up
to 100 x 600 ft.
in One Setting.
Only 10 Minutes
to Set or Remove!
Pulls Itself Along
Thru Winding Up
a Steel Cable —
Water Powered—
Shuts Off the
Water Automati-
cally.

**Correct Batting Weaknesses Build
Baseball Enthusiasm**

Use

BAT-TEE

THREE SIZES — EACH
ADJUSTABLE

Tall Medium Short
40-58" 27-42" 16-30"
Light-Durable Tee—Plastic
Ball on elastic cord.

Base support for indoor use.
Sticks in ground outdoors.
Endorsed by Professionals,
Colleges, High Schools,
and Little Leagues.

BAT-TEE (any size) \$6.95
BAT-TEE KIT (3 sizes) \$20.00
F.O.B. South Haven

BAT-TEE CO.

1086 Monroe Blvd., South Haven, Mich.



Explosive Power

(Continued from page 18)

a week, Monday, Wednesday, and Friday.

2. All candidates are weighed to determine the initial weight with which each subject will exercise. The initial weight to be used by each subject is equal to one-fourth of the subject's body weight. Add five pounds for each additional day of exercising. In addition to this increase in weight, if more than ten repetitions are performed on the third set of exercises, add one pound for each repetition over ten on the following day.

3. The duration of the exercises consists of three sets of repetitions. The first two sets consist of ten repetitions each, and the third set consists of doing as many as possible.

4. The amount of the rest period between each set of repetitions is not to exceed one minute. In other words, the individual performs ten repetitions of heel raising, rests one minute, performs another set of ten repetitions, rests another minute, then performs the third set, trying to do as many as he possibly can.

5. Do not decrease the weight. If less than ten repetitions in a third set are performed, the individual remains at the same weight the following training day.

6. Measurement of the data is confined to the use of the Sargent jump and leg dynamometer. Sargent jump and leg strength scores are measured prior to the use of the weight training program in order to measure improvement at the end of each week and at the completion of the study.

7. The groups are tested once a week on Friday previous to the workout for that day on the Sargent jump and also on leg strength scoring.

8. There are two sets of exercises: 1. The heel raising with resistive weights, using the overload principles. 2. The deep knee bends with weights, using the overload principles.

9. The heel-raising is performed with the subject's toes placed on a board two inches thick. The resistive weights in the form of a barbell are

placed on the subject's shoulder. The bar is padded with sponge and towels in order to distribute the weight more evenly over the subject's shoulders and make him more comfortable in lifting the weight. A repetition constitutes the rising up on the toes (with legs fully extended and knees locked) to the greatest degree possible and then releasing back to the standing position with heels on the floor.

10. In the deep knee bend exercise, the weights are placed on the subject's shoulders as indicated in the heel-raising exercises. A repetition constitutes bending of the knees and lowering of the torso while keeping the back straight (perpendicular to the floor). The subject must do this on his toes in order to balance himself. The knees are flexed until the anterior surface of the thighs are parallel to the floor. Then the subject extends his legs, moving his body into a standing position and keeping his back straight.

11. As a safety factor in both the heel raising and toe raising exercises,

E DWARD STEITZ received his B. S. degree from Cornell where he participated in basketball and baseball. In 1948 he received his master's degree from Springfield College. In addition to his duties as basketball coach and director of athletics at Springfield College, Steitz is director at large for Little League Baseball, an athletic consultant for the air force, and national chairman of the research committee of the National Basketball Coaches Association.

the barbells or weights are attached to ropes and pulleys and guided up and down with the performer in order to prevent them from falling on the subject should he drop them.

Through the use of a pulley system using five to one mechanical advantage, a subject is able to raise and lower the weights effectively. Accompany this network of ropes with two safety cables to further prevent any accident. We found this arrangement safe and convenient to operate along with being very inexpensive to arrange.

In case a pulley system is not available, a wooden stand that will hold the weights can be used. The important factor to keep in mind is to have a protective device for eliminating the possibility of having the weights fall on the participant.

Although our research has been used primarily with basketball players,

(Continued on page 67)

BOOK MANUSCRIPTS

CONSIDERED

by cooperative publisher who offers authors early publication, higher royalty, national distribution, and beautifully designed books. All subjects welcomed. Write, or send your MS directly.

GREENWICH PUBLISHERS, INC.

Attn. Mr. Ball 489 Fifth Ave.
NEW YORK 17, N. Y.

INDEX TO ADVERTISERS

Aalco Mfg. Co.	56
2737 Wyandotte St., St. Louis 11, Mo.	
Adirondack Bats, Inc.	21
Dolgeville, New York	
Aluminum Athletic Equipment Co.	55
1531 Brookhaven Rd., Wynnewood, Pa.	
American Trampoline Co., The	68
Jefferson, Iowa	
Aristo Import Co.	56
630 Fifth Ave., New York, N. Y.	
Arnett, Richard W.	50
P. O. Box 527, Inglewood, Calif.	
Athletic Enterprises	60
727 Winter Ave., Big Rapids, Mich.	
Athletic Institute, The	15
209 S. State St., Chicago 4, Ill.	
Audio Equipment Co., Inc.	43
75 Harbor Rd., Port Washington, N. Y.	
A-V Motion Picture Service	56
P. O. Box 5608, Chicago 80, Ill.	
Bat-Tee Co.	64
1086 Monroe Blvd., South Haven, Mich.	
Bike Web Co.	12, 13
309 W. Jackson Blvd., Chicago, Ill.	
Brown Co., M. D.	58
Lake St., Niles, Mich.	
Brown Co., Wm. C.	14
135 S. Locust, Dubuque, Iowa	
Champion Knitwear Co.	5
115 College Ave., Rochester, N. Y.	
Converse Rubber Co.	45
Malden, Massachusetts	
Eastman Kodak Co.	31
Rochester 4, New York	
Economy Track Equipment	4
1824 Newark, S.E., Grand Rapids, Mich.	
Fenner-Hamilton Trampoline Co.	63
3200 S. Zuni St., Englewood, Colo.	
Greenwich Publishers, Inc.	64
489 Fifth Ave., New York 17, N. Y.	
Gymnastic Supply Co.	61
250 W. 6th St., San Pedro, Calif.	
H. & R. Mfg. Co.	60
Box 17785 — Palms Sta., Los Angeles 34, Calif.	
Harter, House of	56
42 Harter Bldg., Goshen, Ind.	
Harvard Table Tennis Co.	51
60 State St., Boston, Mass.	
Hillerich & Bradsby Co.	24
434 Finzer St., Louisville, Ky.	
Hillyard Chemical Co.	1
St. Joseph, Missouri	
Holmes Folding Hurdle Co.	37
301 S. Junction Ave., Detroit 9, Mich.	
Huntington Laboratories, Inc.	19
Huntington, Indiana	
Ivory System, Inc.	Cover 4
Peabody, Massachusetts	
Jayfro Athletic Supply Co.	62
P. O. Box 1065 — Dept. C, New London, Conn.	
K. & P. Athletic Co., The	60
1115 Jerome St., Midland, Mich.	

COACHES READY REFERENCE SERVICE COUPON

FEBRUARY, 1959

As a service to our readers and for their convenience we list here the advertisers appearing in this issue. Many of the concerns offer free booklets and coaching aids. Simply cut along perforated rule and mail to Service Department, ATHLETIC JOURNAL 1719 Howard St., Evanston, Ill.

COMPLETE LINE

MacGregor Co., The, 17,	See advertisement
Rawlings Sporting Goods Co., Cover 2,	<input type="checkbox"/> Catalog
Spalding & Bros., Inc., A. G., 23,	<input type="checkbox"/> Catalog
Wilson Sporting Goods Co., 9, 57,	See advertisement

SHOES

Converse Rubber Co., 45,	<input type="checkbox"/> Information basketball, track, and tennis shoes
Ripple Sole Corp., 4,	<input type="checkbox"/> Complete information on "Ripple Sole" performance
Spot-Bilt, 3,	<input type="checkbox"/> Information "Spot-Bilt" track shoes

CLOTHING & LETTERING

Champion Knitwear Co., 5,	<input type="checkbox"/> Catalog
King-O'Shea Sportswear Co., 47,	<input type="checkbox"/> Information on custom built athletic equipment
Post Mfg. Co., 46,	<input type="checkbox"/> Free swatch of baseball uniform material
Powers Mfg. Co., 59,	<input type="checkbox"/> Information athletic wear
Sand Knitting Mills Corp., 61,	<input type="checkbox"/> Catalog

TRAINERS' SUPPLIES

Bike Web Co., 12, 13,	<input type="checkbox"/> Information "Bike" trainers supplies
Laurens Laboratories, 62,	<input type="checkbox"/> Literature; <input type="checkbox"/> 10-day free trial of non-electric whirlpool bath unit
Precision Athletic Goggle Co., 62,	<input type="checkbox"/> Brochure
Seron Mfg. Co., 54,	<input type="checkbox"/> Information eyeglass holder, whistle mouthpiece cover, and whistle lanyard
Vibra-Whirl & Co., 52,	<input type="checkbox"/> Information on whirlpool baths

GYMNASIUM & FIELD EQUIPMENT

Aluminum Athletic Equipment Co., 55,	<input type="checkbox"/> Information vaulting poles, starting blocks, jumping standards, and cross bars
American Trampoline Co., 68,	<input type="checkbox"/> New catalog and prices
Arnett, Richard W., 50,	<input type="checkbox"/> Information "Arnett" starting blocks
Audio Equipment Co., Inc., 43,	<input type="checkbox"/> Brochure and price list
Bat-Tee Co., 64,	<input type="checkbox"/> Information on "Bat-Tees"
Brown Co., M. D., 58,	<input type="checkbox"/> Literature and prices
Economy Track Equipment, 4,	<input type="checkbox"/> Catalog
Fenner-Hamilton Trampoline Co., 63,	<input type="checkbox"/> Complete information on "GymMaster" trampolines
Gymnastic Supply Co., 61,	<input type="checkbox"/> Catalog
H. & R. Mfg. Co., 60,	<input type="checkbox"/> Booklet on line markers
Harvard Table Tennis Co., 51,	<input type="checkbox"/> Free Table Tennis Tournament Kit
Homes Folding Hurdle Co., 37,	<input type="checkbox"/> Information hurdles and starting blocks
Jayfro Athletic Supply Co., 62,	<input type="checkbox"/> Catalog
K. & P. Athletic Co., The, 60,	<input type="checkbox"/> Name of nearest dealer
Master Lock Co., 54,	<input type="checkbox"/> Information "Master Padlocks"
Medart Products, Inc., Fred, 49,	<input type="checkbox"/> Catalog
Naden Industries, 61,	<input type="checkbox"/> Football catalog; <input type="checkbox"/> Basketball catalog; <input type="checkbox"/> Baseball catalog
National Sports Co., 58,	<input type="checkbox"/> Catalog
Nissen Trampoline Co., 39,	<input type="checkbox"/> Catalog
Program Aids Co., Inc., The, 58,	<input type="checkbox"/> Playmaster coaching aids; <input type="checkbox"/> Record-Master "Hall of Fame" displays; <input type="checkbox"/> Eraso posters and charts; <input type="checkbox"/> Score-King magnetic scoreboard; <input type="checkbox"/> Spot Awards trophies and cups
Protection Equipment Co., 53,	<input type="checkbox"/> 1959 Catalog
Riddell, Inc., John T., Cover 3,	<input type="checkbox"/> Information "Riddell" helmets
Travelrain Power Sprinkler Co., 64,	<input type="checkbox"/> Information power sprinklers
Vibra-Whirl & Co., 52,	<input type="checkbox"/> Information blocking sleds
York Barbell Co., 64,	<input type="checkbox"/> Copy "Strength and Health" magazine

RECONDITIONERS

Ivory System, Inc., Cover 4, ☐ Add name to "Observer" list

FLOOR FINISHES

Hillyard Chemical Co., 1, ☐ Information "Trophy" gym floor finish
Huntington Laboratories, Inc., 19, ☐ Information "Seal-O-San" gym floor finish

BASEBALL EQUIPMENT

Adirondack Bats, Inc., 21, ☐ Information "Adirondack" bats
Hillerich & Bradsby Co., 24, ☐ Catalog "Louisville Slugger" bats
Tober Baseball Mfg. Co., Inc., 48, ☐ Catalog and price list

SWIMMING SUPPLIES

Aalco Mfg. Co., 56, ☐ Catalog
Ocean Pool Supply Co., 63, ☐ Catalog D

PHOTOGRAPHIC SUPPLIES

Eastman Kodak Co., 31, ☐ Bulletin V3-21

GOLF EQUIPMENT

Hillerich & Bradsby Co., 24, ☐ Catalog "Grand Slam" golf clubs

WATCHES & TIMERS

Aristo Import Co., 56, ☐ Catalog of sports timers

TURF PRODUCTS

West Point Products Corp., 41, ☐ Booklet "Improving Athletic Field Turfgrass"

FILM PROCESSING

A-V Motion Picture Service, 56, ☐ Price List

RUBBER BALLS

Pennsylvania Athletic Products, 33, 36, ☐ Free copy "For Your Bulletin Board" insert

AWARDS & TROPHIES

Harter, House of, 56, ☐ Information track award ribbons

NETS

Sterling Net & Twine Co., Inc., 38, ☐ Literature

FOOD PRODUCTS

Kretchmer Wheat Germ Corp., 59, ☐ Booklet "Selecting Ways of Feeding Wheat Germ to Athletes in Training"

COACHING CLINICS

National Capital Football Clinic, 61, ☐ Information

NEW ITEMS

Dudley Sports Co., 67, ☐ Information batting and pitching tees
Gared Corp., 67, ☐ Information "Ed Macauley Complete Basketball Unit"
MacGregor Co., The, 67, ☐ Information "MacGregor Training Spot"
Rawlings Sporting Goods Co., 67, ☐ Catalog
Sterling Net & Twine Co., 67, ☐ Information golf driving nets and baseball batting cages

BOOKS

(Enclose money where required)

Athletic Enterprises, 60, ☐ "Organization and Administration of the High School Varsity Club," \$1.50
Athletic Institute, The, 15, ☐ Locker Room Slogans, \$1.50
Brown Co., Wm. C. Co., 14, ☐ See advertisement for list of booklets for sale
Greenwich Publishers, Inc., 64, ☐ "Scoring Power With the Winged T Offense," Forest Evashevski and David M. Nelson, \$5.00
Olson, Carl H., 58, ☐ Information regarding submission of manuscripts
Scoremaster Co., 55, ☐ Track and field score cards, 90 cents per set
☐ Information "Scoremaster" baseball scorebooks

This coupon not good after March 31.
Coupon will not be honored unless position is stated.

NAME POSITION

SCHOOL

STREET ADDRESS OF SCHOOL

CITY ZONE STATE

King-O'Shea Sportswear Co. 47
2233 West St., River Grove, Ill.

Kretchmer Wheat Germ Corp. 59
Carrollton 1, Michigan

Laurens Laboratories 62
1801 Eutaw Pl., Baltimore 17, Md.

MacGregor Co., The 17
4861 Spring Grove Ave., Cincinnati 32, Ohio

Master Lock Co. 54
Milwaukee, Wisconsin

Medart Products, Inc., Fred 49
Potomac & De Kalb Sts., St. Louis, Mo.

Naden Industries 61
Webster City, Iowa

National Capital Football Clinic 61
8720 Flower Ave., Silver Spring, Md.

National Sports Co. 58
364 N. Marquette St., Fond du Lac, Wisc.

Nissen Trampoline Co. 39
200 A Ave., N. W., Cedar Rapids, Iowa

Ocean Pool Supply Co. 63
155 W. 23 St., New York 1, N. Y.

Olson, Carl H. 58
Box 567, Patchogue, N. Y.

Pennsylvania Athletic Prod., Div. of the General Tire & Rubber Co. 33, 36
Box 951, Akron, Ohio

Post Mfg. Co. 46
148 Lafayette St., New York 13, N. Y.

Powers Mfg. Co. 59
Waterloo, Iowa

Precision Athletic Goggle Co. 62
Rochelle, Illinois

Program Aids Co., Inc., The 58
550 Fifth Ave., New York 36, N. Y.

Protection Equipment Co. 53
100 Fernwood Ave., Rochester 21, N. Y.

Rawlings Sporting Goods Co. Cover 2
2300 Delmar Blvd., St. Louis, Mo.

Riddell, Inc., John T. Cover 3
1259 N. Wood St., Chicago 22, Ill.

Ripple Sole Corp. 4
28 W. Adams Ave., Detroit 26, Mich.

Sand Knitting Mills Corp. 61
Berlin, Wisconsin

Scoremaster Co. 55
P. O. Box 46038, Hollywood 46, Calif.

Seron Mfg. Co. 54
Barber Bldg., Joliet, Ill.

Spalding & Bros., Inc., A. G. 21
Chicopee, Massachusetts

Spot-Bilt 1
160 Munroe St., Cambridge, Mass.

Sterling Net & Twine Co., Inc. 38
164 Belmont Ave., Belleville 7, N. J.

Tober Baseball Mfg. Co., Inc. 48
P. O. Box 210, Rockville, Conn.

Travelrain Power Sprinkler Co. 64
362 N. Canon Dr., Beverly Hills, Calif.

Vibra-Whirl & Co. 52
P. O. Box 966, Panhandle, Texas

West Point Products Corp. 41
West Point, Pennsylvania

Wilson Sporting Goods Co. 9, 57
2233 West St., River Grove, Ill.

York Barbell Co. 68
York, Pennsylvania

Explosive Power

(Continued from page 64)

coaches of other sports such as football, track, baseball, etc., have indicated a strong interest in our program and can visualize some very significant use of it in building leg strength for their particular sport.

Bibliography

- Brown, Robert J. and Riley, Douglas R., "The Effect of Weight Training on Leg Strength and the Vertical Jump," Unpublished Master's Thesis, Springfield College, Springfield, Massachusetts, June, 1957, 66 pp.
- Capen, Edward K., "The Effect of Systematic Weight Training on Power, Strength, and Endurance," *Research Quarterly*, 21:83-93, May, 1950.
- Carpenter, Aileen, "A Study of Angles in the Measurement of the Leg Lift," *Research Quarterly*, 30:70-72, October, 1938.
- Chui, Edward, "The Effect of Systematic Weight Training on Athletic Power," *Research Quarterly*, 21:188-195, October, 1950.
- DeLorme, Thomas L., "Restoration of Muscle Power by Heavy Resistive Exercises," *Journal of Joint and Bone Surgery*, 27:645-667, October, 1945.
- DeLorme, Thomas L., and Arthur L. Watkins, *Progressive Resistive Exercise*, New York: Appleton-Century-Crafts Inc., 1951, 135 pp.
- Garth, Richard L., "A Study of the Effect of Weight Training On the Jumping Ability of Basketball Players," Unpublished Master's Thesis, State University of Iowa, Iowa City, Iowa, August, 1954, 35 pp.
- Henry, Franklin, "The Practice and Fatigue Effects in the Sargent Test," *Research Quarterly*, 13:16-29, March, 1942.
- Karpovich, Peter V., *Physiology of Muscular Exercise*, Philadelphia: W. B. Saunders Company, 1953, 340 pp.
- Karpovich, Peter V., "Incidence of Injuries in Weight Lifting," *Journal of Physical Education*, 48:71-72, March-April, 1951.
- Masley, John W., A. Harabedian, and D. M. Donaldson, "Weight Training in Relation to Strength, Speed, and Coordination," *Research Quarterly*, 24:308-315, October, 1953.
- McCloy, C. H., "Recent Studies in the Sargent Jump," *Research Quarterly*, 3:235-242, May, 1952.
- Murray, James, and Peter Karpovich, *Weight Training in Athletics*, Englewood Cliffs, New Jersey, Prentice-Hall, Inc., 1956, 314 pp.
- Sharos, Charles L., Ness, Phillip E., "The Effect of Weight Training on Leg Strength and the Vertical Jump," Unpublished Material, Springfield College, Springfield, Massachusetts, November, 1947, 62 pp.
- Van Dalon, Deobold, "New Studies in the Sargent Jump," *Research Quarterly*, 11:112-115, May, 1940.
- Wilkin, Bruce M., "The Effect of Weight On Speed of Movement," *Research Quarterly*, 23:361-369, October, 1952.
- Zorbas, William S., "The Effect of Weight Training Upon the Speed of Muscular Contractions," Unpublished Master's Thesis, Springfield College, Springfield, Massachusetts, 1950, 26 pp.
- Zorbas, William S., and Peter V. Karpovich, "The Effect of Weight Lifting Upon the Speed of Muscular Contractions," *Research Quarterly*, 22:145-148, May, 1951.



For further information check Service Coupon on facing page.



WE are very enthusiastic about the new "MacGregor Training Spat." The training aid which was developed by Ernie Biggs, Ohio State trainer, is ideal for strengthening and conditioning muscles in the leg. The spat slips over any type of athletic shoe and contains 10 individual weights which have a combined weight of three pounds. This feature makes the spat useful in post-injury treatment of knee and ankle muscles. The MacGregor Co., 4861 Spring Grove Ave., Cincinnati 32, Ohio.

JUST off the press is Rawlings' new 1959 spring and summer catalog. Of special interest is an eight-page insert featuring boys' athletic equipment. Greater emphasis has been placed on baseball uniforms, track equipment, golf, and tennis equipment, and more space has been devoted to Rawlings' famed "Herculite" basketballs. Copies of the catalog may be secured by using the Service Coupon on the facing page or writing Rawlings Sporting Goods Co., 2300 Delmar Blvd., St. Louis 3, Mo.



GOLF and driving nets and baseball batting cages are being made with nylon which is exceptionally strong and is not affected by weather or direct sunlight. This material will not rot or mildew. The nets are equipped with nylon ropes which are hung from the ceiling, thus eliminating the need for expensive frames. Sterling Net & Twine Co., 164 Belmont, Belleville 7, N. J.

THIS new combination batting and pitching tee is a very clever baseball coaching aid. The batting tee follows the usual style and has a flexible rubber top which protects both the bat and the upright metal. The pitching trainer is made of durable plastic-coated metal. It is set into a spring which flexes whenever the frame is hit, thus protecting both the ball and the frame. Both tees are adjustable and use the same base. Dudley Sports Co., 633 Second Ave., New York 16, N. Y.



MANY coaches are asked by parents to recommend a backstop and basket. This new "Ed Macauley Complete Basketball Unit" includes backboard, goal, net, and mounting bracket unit in one, easy-to-assemble package. Formerly it was necessary to secure the different parts from various suppliers and then match them together. The unit is priced to sell under \$25.00 and is packed one complete unit to a package. Nonpareil Division of Gared Corp., 918 Mullanphy St., St. Louis 6, Mo.



I'VE COMPARED
AMERICAN TRAMPOLINES
WITH ALL OTHERS...AND
THERE'S **NO** COMPARISON!

HEAVY DUTY BED of 100% nylon, 1½" or 1" webbing, stitched lengthwise under tension on American's precision looms. Double-thick cotton duck or nylon canvas beds also available. Stronger rubber cables perform better . . . last longer.



TRIPLE BRIDGED LEG SECTIONS — an American exclusive — give maximum strength for unequalled performance and longer life. Safer because there is no understructure beneath performance area.

RIGID FRAME features many engineering firsts, including **SPACED DUAL** side and end rails for greater strength . . . flat double-action steel hinges and exclusive hanger bar system for greater safety. **NEW JET-BLACK FRAME** gives performer constant, clear-cut check on his position over the trampoline.

Like sugar and salt, trampolines might look alike . . . but there's a world of difference. American's exclusive features make a big difference in durability and performance. American's rigid frame gives you the benefit of a full bounce . . . American's side and end rails are not only spaced but reinforced for added strength . . . American's exclusive triple bridged legs better balance the unit for maximum support . . . American's new black frame stands out for extra safety — these are some of the little things that add up to longer wear and more trampolining fun. Don't be talked into just any trampoline . . . insist on American!

American Trampolines Meet All A. A. U. and N. C. A. A. Specifications And Are Guaranteed To Be of the Highest Quality



Our new catalog and prices are yours for the asking—write today!

AMERICAN TRAMPOLINE COMPANY • JEFFERSON 11, IOWA

If it's an AMERICAN, it's the FINEST Trampoline



More economical, non-folding trampolines for general outdoor use are also manufactured by American. Ideal for backyards, camps, playgrounds, etc. American also offers the most advanced line of **DIVE-O-TRAMPS** for added swimming fun.

BACK VIEW

of the
helmet

that's

OUT FRONT

with

america's

coaches

and players



John T. RIDDell[®]
INCORPORATED

SPECIALISTS IN FINER ATHLETIC EQUIPMENT FOR HEAD AND FOOT

IVORY SYSTEM

*offers complete reconditioning service
for all sports equipment*

Schools, colleges, and athletic clubs throughout the country have learned that it is sensible economy to have their hockey, basketball, track, and other athletic equipment reconditioned at IVORY SYSTEM.

*America's pioneer and leader
in sports reconditioning service provides . . .*

★ NATION'S BEST EQUIPPED PLANT

★ EXPERIENCED WORKMANSHIP

★ COMPLETE INSURANCE COVERAGE

★ FASTEST AND MOST DEPENDABLE SERVICE

SOLE DISTRIBUTORS
of

IVOR-SAN

Offers positive protection
against athlete's foot in shoes
and locker room

DAWHIDE

Longest wearing and toughest
lacing material ever made for
athletic shoes

*Inquiries receive prompt
attention without obligation*

AMERICA'S OLDEST and LARGEST
RECONDITIONERS of ATHLETIC EQUIPMENT

The **IVORY SYSTEM** inc.

PEABODY

MASSACHUSETTS

VICE

c.

XU